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SCHOOL NURSE AT WORK IN NEW YORK CITY IN 1903

The (School Nurse)

A Survey of the Duties and Responsibilities
of the Nurse in the Maintenance of Health
and Physical Perfection and the Prevention
of Disease among School Children

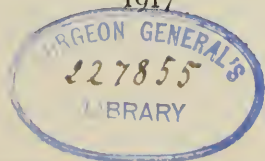
By
Lina Rogers (Struthers) R. N.

Graduate of Hospital for Sick Children, Toronto,
Canada; Post-Graduate of the Royal Victoria
Hospital, Montreal, Canada; Superintendent of
School Nurses, New York City, 1902-1908; Super-
intendent of School Nurses, Toronto, Canada,
1910-1913; Chairman of School Nursing Com-
mittee of the National Organization of Public
Health Nursing, 1913-1916

With 24 Illustrations

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AS A MARK OF APPRECIATION OF HIS INTEREST IN THE NURSING
PROFESSION AND HIS ACTIVE EFFORTS ON BEHALF
OF SICK AND UNFORTUNATE CHILDREN
I DEDICATE THIS LITTLE BOOK TO

MR. JOHN ROSS ROBERTSON

WHO HAS GENEROUSLY GIVEN OF HIS TIME, INFLUENCE, AND MEANS
TO THE SAVING OF CHILD LIFE AND TO RAISING
NURSING STANDARDS IN AMERICA

“Is it not living in a continual mistake to look upon diseases, as we do, as separate things, which must exist, like cats and dogs, instead of looking upon them as conditions, like a dirty and clean condition, and just as much under our control? ”

FLORENCE NIGHTINGALE.

“I would have you know that neither in any struggle nor in any kind of practical life will you get on worse because you have brought your body into a good condition. As the body is useful in all pursuits in which men engage, it is of great importance to have it in the best possible condition. Weakness of memory, low spirits, ill-temper, and even insanity often penetrate the mind of many persons so deeply through their bad physical condition, as to cast out and dispossess knowledge itself.”

SOCRATES.

PREFACE

THIS little volume is offered to School Nurses in the hope that it may contain suggestions and directions that will be of material assistance to them. Many subjects have been but briefly discussed, for it is not claimed that this is a text-book containing full information on school nursing.

School nursing is still in its infancy, and many changes in methods are to be expected, but the underlying essentials—child love and preservation of child health—will exist as long as child life.

I wish to acknowledge my appreciation of the kindly assistance of Dr. A. E. Webster, Dean of the Royal College of Dental Surgeons, Toronto, and Dr. A. J. McDonagh, Professor of Periodontology, Royal College of Dental Surgeons, Toronto, for reading the chapter on Dental Caries and Prophylaxis; Dr. F. C. Trebilcock, Oculist, Western Hospital, Toronto, for reading the chapter on Defective Vision; Dr. F. S. Minns, Tuberculosis

Officer, Board of Education, Toronto, for reading the chapter on Tuberculosis; my husband, Dr. W. E. Struthers, formerly Chief Medical Officer, Board of Education, Toronto, for suggestions and advice.

L. R. S.

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The School Nurse

The School Nurse

CHAPTER I

INTRODUCTION

MUCH has been said about interference with personal liberty in connection with compulsory medical inspection of schools. The same question was violently argued when compulsory education was introduced. Why should the State control education and enforce attendance at school? This is a reasonable question, and it is also reasonable to ask why the State should step into the school and ask about a child's physical condition. Society for its own well-being must impose obligations upon its members. If the exercise of the individual's liberty or right, or the individual's idea of right and liberty, inflicts injuries upon the people as a whole, then the individual liberty must be curtailed or prohibited. All "law" is but restriction of individual liberty or

action, so that people may live amicably in a community and without danger to each other. The first aim of every law is for community or State protection. No one will now deny that the education of the young is a supreme necessity! Is it not of even greater importance that every child has a sound constitution and obtains full physical development! This is the adult's capital to meet competition and make a livelihood. Everywhere in society there is partial denial of individual liberty. Where a parent wishes to exercise his authority over a child, to the hurt or detriment of the future prospects of that child, the State has a right to interfere to protect the child. Health and education are indispensable to happiness and vigorous independence.

Civilized countries have been slow to recognize that the school is the training ground of every child for the battle of life. The full duties and functions of the school are just beginning to be realized.

A child's school life should mean a preparation and training that will fit him physically, mentally, and morally for his place in the world, so that each one is given the opportunity to secure health, happiness, and success. Our grandparents were satisfied if our parents could read and write with

ease, or even to go so far as to dabble in modern or ancient languages. Our parents were clever enough to discover that the school was the place to prepare children for commercial life. We have found out that the school is a good place to get a technical education, to learn a trade, or study different industrial enterprises. In recent years agriculture has been rapping on the school door demanding that scientific and practical farming be taught in the schools. Within the last fifteen years, health, the best asset of boy or girl, is making a heroic struggle against the protests of the extreme conservatives and demanding its place on the school curriculum. For many years schools have had courses of study in hygiene but this was not definitely related in the public mind to health. At last it is thought wise to make these courses practical, to warn the child of dangers, to teach it how to live that disease may be avoided and health maintained; to exhort, guide, or direct parents who are careless, ignorant, or neglectful of their children; to see that the child gets a square deal and a chance to grow up in health and strength.

There are still many people, even kindly souls, who cry out about this "fad," this innovation in school life and work because of the cost. What

willful, heartless blindness! It is true this must mean an increased expenditure, because only the best trained men and women can do this work properly. But the child's health is the most important resource in the earning capacity of the man. It means more to man's success and happiness than education, skill, or genius. All parents should be held strictly accountable for the health of their children. It is as important to the nation as it is to the individual. How can this health education be given with the least disturbance of home and school! This can only be done by the most cordial coöperation between the parents and school workers, by more intimate relations between home and school, by parental knowledge of the aims of the school, by home sympathy with the school home. When the school teacher, nurse, and doctor have a personal and intimate knowledge of the children and parents, and a sympathetic understanding of the troubles and difficulties of the home, the physical, mental, and moral training of the children will present less difficulties and better results will be obtained.

It is very generally believed that so-called medical inspection of schools, or more properly speaking, health supervision of the school children, is of recent origin; that it is, in fact, one of

the progressive measures of this century—an outcome of the newly aroused social conscience. Nevertheless, medical inspection of schools dates back to the palmy days of the ancient Greeks and Romans. Under these ancient and warlike people, the State trained, educated, and developed the child for his place in life. With them, however, the child was first the child of the State, and secondly the child of his parents, and to the State his physical training was more important than his mental training, because the chief duty of the State was to prepare the man for war.

Since the revival of learning, and more especially since the introduction of compulsory education, educational training took the foremost place—almost to the exclusion of physical training. The physical care of the child was relegated to the parent. In consequence of the neglect of physical training, the stature of men and women decreased, and health deteriorated. During the last fifty years both in America and Europe there has been a too general movement of rural peoples to urban centers, and the resulting congestion of population in towns and cities has had a demoralizing effect on public health. And for many years but little attention was paid to health conditions in the public schools.

While there was no organized medical supervision of schools until the early days of the twentieth century, many individuals had sought to carry out some measure of protection of school children from disease.

POLICY OF EXCLUSION FROM SCHOOL

In the nineteenth century, therefore, medical supervision of schools only meant exclusion from school for communicable or loathsome diseases, and but little attention was paid to the child after exclusion. The parents, through ignorance or poverty, failed to obtain the necessary treatment. The whole policy of the school authorities was exclusion, and in cases of smallpox, scarlet fever, and diphtheria, the health authorities were notified; in minor contagious diseases, such as measles, chickenpox, whooping cough, ringworm, scabies, sore eyes, or discharging ears, nothing was done, unless the parents were intelligent enough to recognize the desirability of getting the child back to school, even if they did not know the danger of the malady, or need of treatment. The excluded child in most instances was neglected at home. Unwashed and uncared for he played on the street and was allowed to play even with the other school children after school hours, thereby

making of no avail the first act of exclusion. During this enforced absence from school, the child not only lost his precious education, but also developed the vicious habits of the idle, and an innocent child became slothful, unclean, wasteful, criminal, and immoral. If fortunately, the child became cured, and was sent back to school, he soon discovered that other tastes had been formed and that school duties were irksome. Truancy was the only logical sequence.

Many books have been written on the subject of medical inspection of schools, but all have been written more or less exclusively from the point of view of the medical inspector (or officer) and but little has been said of the important place of the trained nurse in the work.

POLICY OF CURE

The advent of the school nurse brought a radical change in the methods of dealing with diseased children. Instead of being excluded and neglected, they were treated by the school nurse. Many cases were treated in the schools without danger of contagion to other children. The nurse visited the homes, pointed out to parents the dangers of such maladies, and especially interested the mother in getting the children well.

The nurses gave the mothers directions how to care for the children while at home, or demonstrated how treatment should be given. This stimulated the mother's pride in the care of her children, and the children became very much interested in the nurse. The trained, and let us add, the kindly and diplomatic nurse, became the guide, philosopher, and friend of the family. The school nurse who fails to get into intimate touch with the family, must confess she has failed in her first mission. As a result of the nurse's work, school attendance increased fifty per cent. Interested and regular attendance took the place of exclusion and truancy. The child received his education, developed his self-respect, and became interested in his own future success. Truancy was rare. The nurse was interested in the child, the mother, the home, and she became the bond of friendship with the school. Teachers learned from the nurse of home conditions, difficulties and troubles, and gained information not obtainable from any other source. Many cases of listlessness, backwardness, stubbornness, or viciousness were found to be due to some remediable physical defect, or some difficulty in the home.

School nursing has revolutionized the system

of medical inspection of schools. Since the introduction of the school nurse, the importance of her work has been widely recognized and has resulted in a policy of conservation of school attendance instead of exclusion. At first the nurses were allowed to treat only such cases as were sent to them by the medical inspector. Later, however, they were given the duty of making the weekly or fortnightly classroom inspection. All children in the class were examined, not only for the possible presence of disease, but also for neatness and cleanliness. A pleasant word of commendation, or a short reproof meant a great deal to each child. The one commended gained in self-respect; the one kindly reproofed and exhorted to do better, was stimulated to improve. The nurse referred children with suspected contagious disease to the medical inspector for diagnosis. Obtaining results was left to the nurse. She visited the home and explained to the parents the nature of the disease or defect, and the care required. She saw that treatment was obtained. If parents were too poor to pay for treatment, she treated the case, if possible, according to the directions adopted by regulation of the School Board, or saw that the child was taken to a dispensary or hospital for the necessary treatment.

If she found children under school age at the home who were diseased or had physical defects, she took the same interest in these little ones, and obtained medical attention from the family physician, dispensary, or hospital. If she found a pregnant mother she showed her interest by kindly advice and warning. In many cases the nurse can be of great service to the mother by advising her how to obtain necessary medical and nursing care.

If the nurse discovered unsanitary conditions in the home or on the premises, she reported these to the Medical Officer of Health. Any suspected communicable disease was likewise reported. Before doing so the nurse explained to the mother that landlords are liable to a fine if their premises are not kept in a sanitary condition and that parents are liable to prosecution for concealing communicable disease. If this information is given in a kindly and friendly way, no antagonism is aroused. In this way the school nurse assists in maintaining a high standard of public health, and yet retains the confidence and friendship of the family. This means a great deal for community welfare and strengthens the intimate relationship between the school and the home.

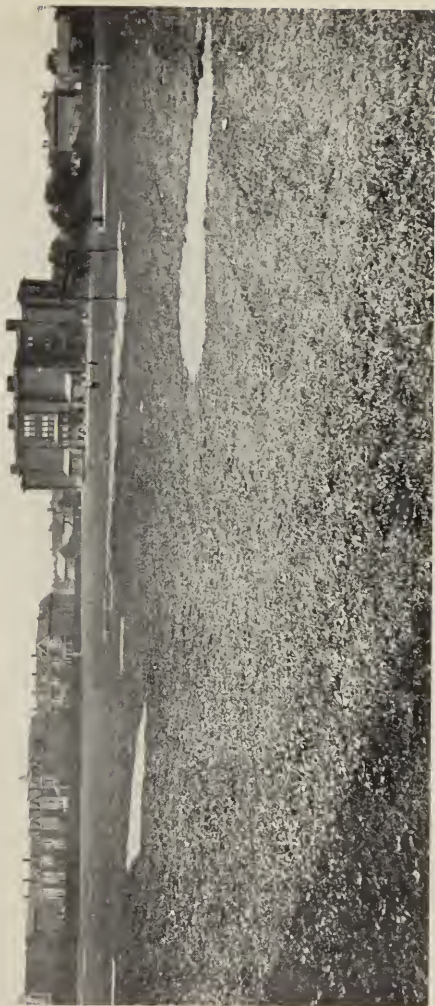
Nurses will naturally expect to find the worst

conditions among the children of the poor, yet they will undoubtedly be surprised at the great number of hitherto undiscovered physical defects found among the children of the well-to-do.

THE POLICY OF PREVENTION

During the last ten years the important outcome of the school health work has been the emphasis placed upon a policy of prevention. It is just the old story that prevention is better than cure; that education is better than reformation. Such a policy was the natural outcome of the combined efforts of school teacher, nurse, and doctor. School children had learned much about the harmfulness of disease, and their responsibility in preventing its spread. The next natural question was how to avoid disease. Hence more attention was paid to teaching the laws of health and the practice of personal hygiene. Even teachers are apt to look upon this as a rather technical subject but all the laws of health may be presented in a very simple way. This will be given later. At the present time, therefore, health education is the fundamental basis of all school health work. To cure disease or remove physical defect is a necessary but incidental part of the work. The

factors of greatest importance to the child's future welfare are wholesome food, proper clothing, personal cleanliness, physical drill and play, and plenty of fresh air in school and home. Unfortunately many have been slow to recognize that this last policy should be the primary function of the school in health work.



SCHOOL PLAY GROUND. SIX ACRES

CHAPTER II

HISTORY

MEDICAL Inspection of Schools was in vogue many years before the trained nurse was engaged in the school work. But even medical inspection has only of recent years come into prominence, and its great public value recognized. For many years social and philanthropic workers for the amelioration and betterment of the conditions of the poor, recognized that they were not making any permanent progress. Large sums of money and much earnest effort produced only passing relief. Any progress toward real improvement could only be looked upon as halting and disappointing. The futility of the methods applied to adults and the practical failure to save men and women from the abyss of drink, crime, and immorality forced the attention of the thoughtful upon the child problem. So social efforts shifted largely from the adult to the child, with the most gratifying results. When the maximum

efforts were directed to the physical development of the child, to the preservation of health, and protection from disease, to instruction in personal hygiene and cleanliness, to child games and playgrounds, to the production of healthy, robust childhood, pessimists became optimists, and permanently higher standards of life and conduct seemed to be a reasonable possibility. It was quickly observed that the maximum result could be best obtained through the medium of the school. It is difficult to decide just what country is entitled to the credit of introducing medical inspection of schools. Considerable was done by individual, kind-hearted, and far-seeing physicians before the project was officially taken up by governments. In France, as early as 1833, school committees were charged with keeping the school-houses clean, and in 1842, a decree was passed that every public school should be visited by a physician who was to inspect the school grounds and make a general examination of the health of the school children. In 1874, Brussels had physicians visit the schools three times a month. Although progress was slow for the next twenty years, yet many countries were following up and improving the systems of medical supervision. In England, the London School Board appointed

a medical officer in 1891. In 1893, Bradford appointed Dr. James Kerr, who is now recognized as one of the leading authorities on school medical supervision. In 1907, an Act was passed making school medical inspection compulsory throughout the whole of England and Wales. In America, Boston is entitled to the credit of being the pioneer in this work, as this city established school medical inspection in 1894. Chicago followed in 1895, New York in 1897, and Philadelphia in 1898.

If the history of the introduction of school medical inspection is rather vague and uncertain, the history of the introduction of the trained nurse into school work is very definite, because much more recent. Miss Amy Hughes of London, England, began school nursing in 1893 under the auspices of the Metropolitan Association of Nursing. New York City was the first city in the world to place school nursing under municipal direction and control. In 1902, the writer began school nursing work under the auspices of the Board of Health. A short history of the introduction of school nursing into some of the cities of England, America, and Canada is here given to show the growth of this work. Many cities in America and elsewhere had school nursing service directed by nursing associations and financed by philan-

thropic individuals or societies before municipal school nursing was begun. New York City was the first to establish a municipal school nursing service. Many other municipalities followed New York's lead in taking over the school nursing service established by nursing associations simply to demonstrate what could be accomplished in the schools by the trained nurse.

NEW YORK, U. S. A.

Medical inspection of schools was established in New York City in 1897, but after a few years it was realized that the system, as carried out, was entirely inadequate to meet the needs of the situation. The total results of the visits of the medical inspectors to the schools was the exclusion of children for communicable disease. No effort was made to obtain treatment for the sick, remedial measures for those with physical defect, or care for the anæmic and undernourished. It was quite common to have schools report that ten to twenty per cent. were absent because of disease, debility, or defect. It was felt by all those deeply interested in the children that the results being obtained were unsatisfactory and fleeting, and that some effort must be made to obtain

permanent improvement. The problem of the relation of the physical condition of the child and his school progress was becoming a serious matter and it was felt that the municipality would have to take some steps to supply the necessary treatment for the sick and to educate parents and children to conserve the health of the coming generation.

In 1902, at an informal meeting of Dr. Lederle, Health Commissioner, Mr. Burlingham, Chairman of the Board of Education, and Miss Lillian D. Wald of the Henry Street Settlement, this question was carefully discussed. It was recognized that the great prevalence of disease in the crowded parts of the city especially, was becoming a serious factor in off-setting the efforts to give every child a good education, and large sums of money were being practically wasted in trying to educate children physically unfit to take advantage of their opportunities. The outcome of this discussion was the decision to place a trained nurse in a number of schools whose duty would be to treat children with minor diseases as far as possible in the schools, to visit the homes to interest the parents in their further care and to demonstrate any necessary treatment. Miss Wald offered to supply a nurse from the Henry

Street Settlement to demonstrate what could be done in this way.

The author was asked to undertake this first municipal experiment in school nursing and on October 1, 1902, began her work. Previous to this time nurses from the City Mission had been given permission to treat eye diseases in some of the Children's Aid Schools (schools supported mainly by private subscription). In other parts of America, as well as in Europe, some work had been undertaken along these lines by visiting nursing associations. In New York City the author's work was begun in four down-town schools, namely public schools No. 147, East Broadway, No. 31, Monroe Street, No. 12, Madison Street, and a parochial school at 262 Madison Street. The attendance of these schools was about ten thousand children. The principals were called upon and the nature of the undertaking fully explained to them. They offered their heartiest coöperation, but it was difficult to find space within the school for the clinic. After consultation with the medical inspector in these schools it was arranged that the children who would ordinarily be excluded for minor diseases and defects should be sent to the school nurse for treatment. When the nurse reported to the principal, the list of those requiring

treatment was sent to the teachers and the children required to attend in the school dispensary. An hour was devoted daily in each school to treatment of minor contagious diseases, such as ringworm, scabies, impetigo, and such conditions as inflamed eyes and discharging ears, to dressing sores, cuts, and infected wounds, and to the inculcation of the oft-repeated lesson of personal cleanliness in the constant fight against pediculosis.

In old school No. 12, an unused stair closet was the only available space for a dispensary, and although the nurse could not stand erect here, there was sufficient room to store supplies. In front of an adjacent window a radiator did duty as a dressing table. An old high chair such as was then used in the New York public schools, was rescued from an ash heap, and the janitor repaired the seat by nailing on a rough board. This was the only accommodation for the children while being treated for eye and skin diseases. This constituted the full equipment of the dispensary for some time. It was in this school the writer had her first experience in dressing a rat bite. On the second day a child presented herself with the story that while asleep during the previous night she had been bitten three times on the hand by a rat. Here also occurred another

striking and illuminating incident. A small boy having accidentally cut his hand was sent to have it dressed and was allowed to act as dispensary monitor for the morning. He presented himself for several successive days so that more careful inquiry was made as to the cause of his wounds. The information was finally elicited that the subsequent wounds were self-inflicted that he might escape from school lessons. In the other schools the dispensary was in the basement playground where the nurse used the window sills as dressing tables. Chairs were borrowed from the classrooms, a high one for the smaller children and an ordinary one for the older children. These few details suffice to show the meagre beginnings of school nursing and the great limitations and difficulties met with in its inauguration.

The development of these small clinics was remarkable. When children found out that they could have treatment daily and remain in school "sore spots" seemed to crop up over night. In a few days the work became so arduous that Miss Yssabella G. Waters, of the Settlement, volunteered her services and assisted for some time until the "epidemie" was somewhat abated.

The supplies used were donated by the Settlement. A course of treatment for skin diseases

was outlined and submitted to the Department of Health by the writer which was accepted and became part of the Regulations.

When the children had been treated and returned to the classroom, the names of those excluded and of the absentees were obtained from the principal so that these might be visited in their homes, the parents advised of their ailments, and instructed in their necessary care and treatment. Under the old system, when a child was sent home with an exclusion card stating the communicable disease in technical terms, the notification card was carefully placed on the mantel, often behind the clock for safety, and the child, not knowing anything more than that he Must Not Return to School, went to the street to play with his school companions as soon as school was out. In this way the protection for other children obtained by exclusion was lost and the child also lost his schooling. When the nurse visited the home she explained what the ailment was, the regulations governing the exclusion, and the treatment required. It was not only necessary to explain all these things but it was found necessary to demonstrate to the mothers how the orders of the dispensary physicians were to be carried out. In many cases children rebelled against the treat-

ment administered by the mothers but quietly submitted to the nurse. Even adults sometimes have this peculiar attitude of mind when ill. "If you'll wash Harry's eyes, I'll hold him," said one mother to the school nurse, so Harry was sent for. "Harry, I'm going to treat your eyes the way we do it in school; you are not getting along as well as you should, and your eyes will have to be treated more regularly." Harry sat down for treatment without the least demur. The amazed mother threw up both hands and sadly shaking her head said: "Well, I can't make him do it, even if I lick him." Children excluded for trachoma were instructed to go to the dispensary for treatment. Parents at first refused to send their children because they were told the treatment consisted of burning the eyes out. It was difficult to make the ignorant parents understand the nature of the treatment, and not easy to overcome this fear and prejudice. It was most difficult, too, to have home care even fairly well carried out.

During these visits many distressing home conditions came to the knowledge of the school nurse. It was found that many, many school children were out of school from other causes than illness.

Many were absent for want of clothing or boots; many were undernourished for want of food; many girls from ten or eleven to twelve or thirteen were absent as nurses for the baby sisters and brothers, and cooks for the rest of the family while the mother went out working; many were working at home under wretched conditions at sewing or other work; others were found nursing a sick mother or father; too many others were truants and were already the victims of the temptations of the streets, while yet young in years, were old in crime and sin. So the field of vision of the school nurse rapidly widened. It was easy to see that if the school children were to be given even a fair opportunity of preparation for life's work and duties, many things in the social life of the homes had to be improved. All the social problems of humanity, problems as old as the world face the school nurse at the threshold of her work. Although at first this seemed appalling, there were things at hand that could be done and these were vigorously undertaken. Charitable institutions were appealed to for immediate physical needs; the very ill were gotten into hospitals or were referred to the Nurse's Settlement; work was secured for the adult unemployed and nourishing food for the weak, emaciated children;

warm clothing and boots were obtained for the most needy; the mother was encouraged and helped and guided in cleaning up a little, so that some sunshine peeped into these squalid homes, and hope revived. But the task seemed endless. Nevertheless, at the end of the first month's work, the small beginning seemed so satisfactory and full of hope of what could be accomplished that the Board of Health asked the nurse to accept an appointment to carry on the work regularly. As this was entirely new work the Board had no funds available to employ nurses at this time. On November 7, 1902, the writer was appointed school nurse by the Board of Health of the City of New York, the first municipality in the world to undertake school nursing. The success of this experimental beginning was due in a large measure to the splendid assistance of Miss Y. G. Waters, who gave her services freely, and the encouragement and advice of Miss Lillian D. Wald, Miss J. E. Hitchcock, Miss L. L. Dock, and Mrs. Florence Kelley, while a working system was being organized.

In the treatment of ailments the following course was adopted and a code arranged so that the children would not know the disease recorded on the cards.

<i>Pediculosis</i>	Saturate hair with equal parts of kerosene and sweet oil. Next day wash with solution of potassium carbonate (one teaspoonful to one quart of water) followed by soap and water. To remove "nits" use hot vinegar.
<i>Favus</i>	Mild cases: Scrub with tincture of green soap, and cover with flexible collodion. Severe cases: Scrub with tincture of green soap, epilate, paint with tincture of iodine, and cover with flexible collodion.
<i>Ringworm</i>	Wash with tincture of green soap and cover with collodion.
<i>Scabies</i>	Scrub with tincture of green soap and apply sulphur ointment.
<i>Impetigo</i>	Remove crusts with tincture of green soap and apply white precipitate ointment (Ammon. Hydrarg.).
<i>Molluscum Contagiosum</i>	Express contents, apply tincture of iodine on toothpick probe.
<i>Conjunctivitis</i>	Irrigate with solution of boric acid.

The following is the code first used:

1	Diphtheria	12	Varicella
2	Pediculosis	13	Pertussis
3	Tonsilitis	14	Mumps
4	Pediculosis	15	Nothing
5	Ac. Conjunctivitis	16	Scabies
6	Pediculosis	17	Ringworm
7	Trachoma	18	Impetigo
8	Pediculosis	19	Favus
9	Nothing	20	Molluscum Contagi-
10	Scarlet Fever		osum
11	Measles	21	Acute Coryza

The numbers 9 and 15 were given to children having no disease, so that all might be given a number and no distinction made. Numbers 2, 4, 6, 8 were given to avoid hurting the feelings of any children who might discover what the first number meant.

The following is a list of supplies used by the nurses. These were provided by the Board of Education, and were ordered by the school principals:

1 screen	1 qt. tr. green soap
1 cabinet	4 oz. collodion
2 chairs (1 high)	1 lb. vaseline
1 table	4 oz. white precipitate ointment
1 scrap basket	2 basins (white granite)
12 towels	1 glass jar (1 gallon)
2 lbs. absorbent cotton	1 ointment jar (glass)
6 yds absorbent gauze	100 bichloride mercury tablets.
12 bandages (assorted)	
1 lb. boracic acid powder	

In December, 1902, twelve assistant nurses were appointed and the office of Superintendent of School Nurses was created for the first municipal school nurse. The work of the twelve nurses, who were specially qualified for school nursing, was so remarkable that when the report was presented to the Board of Estimate and Apportion-

ment on January 1, 1903, an appropriation of thirty thousand dollars was immediately granted for the enlargement of the staff of nurses. In February, 1903, fifteen nurses were added to the staff making a total of twenty-seven. Each nurse was given a group of four or five schools with a total of about ten thousand children in each group. The system was revised in 1905, when the nurses were required to make the classroom inspections. This was done to allow the medical inspectors time to make complete physical examinations of all school children.

The follow-up work revolutionized the method of school medical inspection in vogue before the advent of the school nurse. The object was to keep as many children as possible in school and only children with communicable diseases and such ailments as trachoma, virulent conjunctivitis, and persistent pediculosis were excluded. More recently school nurses have been required to take throat cultures, report children to the principal for exclusion for suspected contagious disease, and readmit pupils after absence for illness.

The school nurse has become the principal's first assistant, the home health visitor, and the mother's friend and advisor, and in some communities she is the truant officer as well.

LONDON, ENGLAND

In 1893 in London, England, the unhealthy condition of the school children in the Drury Lane district was so distressing that Mrs. Leon, a manager of one of the poor schools, called upon the Metropolitan Association of Nursing and asked if a nurse might be allowed to investigate and give advice at the school. Miss Amy Hughes the superintendent of the Nursing Association made the first visit of inspection, and seeing the great possibilities for the future of the children, if properly cared for, started the work immediately by treating in the school the minor ailments such as sore eyes, discharging ears, festering cuts, and broken chilblains. Children were kept home on the plea of illness or other minor ailments, but were kept really to work, to run errands, or to care for smaller children. The ailments received little or no attention. The teachers welcomed this new idea, and showed their interest and co-operation by giving up one of their classrooms and providing basins and hot water. A nearby dispensary physician was consulted and he at once showed his sympathy by organizing a school clinic.

The children were sent to the nurse in classes, and those requiring dispensary care were sent to

the new clinics, the minor cases receiving the necessary care from the nurse in the school. The parents were visited and directions given as to the proper care of the children before coming to school.

The whole experiment was so successful that similar work was undertaken in other sections of the city. As this was an entirely new departure in nursing and education, objections were raised by some of the committees who directed the nursing organizations, owing to lack of both nurses and funds.

This experimental work clearly demonstrated to the education authorities that there was a great problem in child health education to be worked out in the schools.

Miss Honnor Morten who was a trained nurse and a member of the School Board devoted her experienced mind to a solution of the problem. Through her efforts the London School Nurses' Society was organized in 1898. This was an organization which was to supply visiting nurses to elementary schools in poor districts. It was composed of public-spirited women who volunteered to supply the finances for the object of the association. It also supplied the necessary facilities for carrying on the work, such as ointments, surgical dressings, and bandages.

In 1900 one nurse was appointed at a salary of

seventy pounds a year whose duty it was "to inspect the children's heads."

In 1904 the London County Council took over the work from the School Nurses' Society and appointed a staff of nurses to visit schools regularly. This was the beginning of the school nursing work under municipal authorities in England. Miss Helen L. Pearse was appointed in 1908 by the London County Council as the first Superintendent of School Nurses.

LIVERPOOL, ENGLAND

In 1895 Liverpool started school nursing in some of its Board Schools along the same lines as London. The experiment was made possible by Mrs. Rathbone guaranteeing a nurse's salary for one year. Five schools were visited regularly and the success of the work was assured from the beginning.

Other schools could obtain the services of a nurse by paying 2s 6d per week during the school term, provided the number of schools so contributing was sufficient to pay a reasonable salary. Cities in different parts of England have since taken up school nursing with good results.

LOS ANGELES, U. S. A.

In 1903 the city district nurse did some experi-

mental work in two schools in the poorer sections. The result of this work was the appointment of a school nurse in September, 1904, by the Department of Health. Later on two more nurses were added, making a staff of three; some work in the schools was still being done by district nurses who reported that part of their work to the health authorities. In 1911 there were six nurses directed by the Department of Health. During the same year the School Board appointed seven nurses.

This system could not be conducive to good results as there must necessarily have been overlapping and consequently wasted energy. Thus there were school nurses under the authority of the Department of Health, other school nurses under the authority of the Board of Education, and others again under the direction of the Visiting Nursing Association.¹

BOSTON, U. S. A.

In 1894 Boston introduced Medical Inspection of Schools, and has the distinction of being the first American city to do so. It was not until December, 1905, that the Boston District Nursing

¹ Since writing the above the work of the School Nurses has been placed under the direction of the Board of Education.

Association provided a school nurse. In January, 1906, the Fathers' and Mothers' Club provided a second nurse, and the Mt. Sinai Hospital Society supplied a nurse in December. In January and February of the following year the District Nursing Association provided two more nurses, making a total of seven nurses supported by organizations in the city. In September, 1907, the School Committee took charge of the school nurses, and organized a division under the Department of School Hygiene. In 1912 there were thirty-four nurses on the staff. The medical inspectors of schools remained under the Board of Health until September, 1915, when they were transferred from the Board of Health to the Board of Education. The entire department of medical inspection is now under the Board of Education. The sum appropriated provided one supervising nurse and nineteen assistants with one substitute.

PHILADELPHIA, U. S. A.

In November, 1903, the Philadelphia Visiting Nursing Society placed a nurse, Miss Anna L. Stanley, in one of the public schools to demonstrate the needs of the school children in that city. Medical inspection of schools had been in operation since 1898, but the trained nurse had

not been used in the work. While the experiment was a success in every way, it was not until 1907 that any change was made. The Society then gave three nurses for three months with the understanding that they would be withdrawn if the city did not take up the work.

In January, 1908, the Board of Education granted enough money to provide a supervising nurse and five assistants. The school medical inspectors were under the direction of the Board of Health. A very interesting feature of the work is that Miss Reeve, a colored nurse, volunteered her services for four years to the pupils in the negro section. She was appointed to the regular staff in 1908.

CHICAGO, U. S. A.

In Chicago, 1901, the Visiting Nursing Association was requested by the Board of Education to supply nurses to visit the crippled children in four of the public schools. The Association gladly acceded to the Board's request, and the work was started.

In 1906, Miss Jane Addams of Hull House co-operated with the Association. Three nurses were supplied for a period of three months. In the appropriations for the following year the

Board of Health made provisions for the school nurses, and the Visiting Nursing Association was asked to supervise their work. In 1910 the Board of Health took over the entire direction of the school nursing service, and in 1913 created the position of Superintendent of Field Nurses. The present staff includes one superintendent of nurses, six supervising field nurses, and ninety-six field nurses.

PUEBLO, COLORADO, U. S. A.

In January, 1909, the writer was asked to organize the work in Pueblo, Colorado, under the direction of the Board of Education, and to this extent a new experience. This experiment proved one of great value inasmuch as it demonstrated that the work could be done under the direction of the Board of Education with better results than under the Department of Health. The co-operation of the teachers was more enthusiastic and effective because they looked upon the nurse as a member of the school staff, and the plan could be worked out along lines of prevention as well as cure. School nursing was made a part of the general school plan. The work was not restricted to contagious diseases, as it was to a great extent at that time in New York under the Board of Health.

TORONTO, ONTARIO, CANADA

School nursing was instituted by the Board of Education, Toronto, on April 24, 1910. For some time previous to this the need of a system of medical inspection had been urged by different organizations, especially the Local Council of Women. It was Mr. John Ross Robertson who finally made the work possible by his able advocacy of this necessary health work, even offering \$2500 for the expenses of the first year. This generous offer was not accepted, but the reports in Mr. Robertson's newspaper of the work being done in some American cities, and his comprehensive presentation of the great possibilities of conserving the health of the city's school children induced the Board of Education to put \$2500 in the estimates for the experimental work, and the writer was invited to organize it. The first step taken was to consult with the Chief Inspector, Dr. James L. Hughes, in regard to the schools where children seemed most in need of health supervision. At that time there were seventy-six schools, including four Homes and two Industrial Schools with an attendance of forty-five thousand children under the jurisdiction of the Board. Inquiry was made at the different dis-

pensaries and hospitals as to the possibility of obtaining treatment. The relief agencies and settlements were visited to find out what was being done for the relief of children, and to obtain a general knowledge of the down-town districts. Three schools were selected, the principals were interviewed, and the plan explained. They entered heartily into the plan and assisted by making all necessary arrangements. The Board supplied a room for special inspections and treatments, desk, tables, and the necessary supplies. Classroom inspections were made at once, and the pupils treated as their needs required. On May 6th two assistant nurses were appointed. The scheme carried out was to inspect children in the classrooms, examining the eyes, throat, skin, and hair. Those for exclusion were referred to the principal who sent them home on the advice of the nurse. These were visited the same day, and the parents advised to have their own family physician see the children. If the parents were too poor to have a family doctor, they consulted the dispensary physician. Those with unclean heads were advised to go home and have the hair combed with a fine-toothed comb, and to come back to school at once. The children with eczema, impetigo, scabies, etc., were treated in

school by the nurse where it was evident that no home care had been provided.

It was not until September 15th, that two medical inspectors were appointed—a woman physician for the girls, and a man for the boys. This division was found neither necessary nor advisable, and later each physician examined both boys and girls. On November 3d, two more nurses were appointed. This staff of five nurses and two doctors cared for twenty schools with an attendance of twelve thousand children. From the schools not inspected, lists were sent of the children requiring the medical inspectors' attention to the Chief Inspector, and these were referred to them. It was shown by the reports of the first six months that a more comprehensive system was required at once.

On February 2, 1911, Dr. W. E. Struthers was appointed Chief Medical Inspector, and thirteen additional nurses were also appointed. Six additional medical inspectors, and one dental inspector were appointed March 8th. The service was then organized so that every school should have a daily visit from either the medical inspector or the nurse. The city was divided into sixteen districts, each having two groups of from three to five schools. The nurse having only one group

visited each school daily, while the medical inspector having two groups visited each one every other day. Dr. W. H. Doherty, the dental inspector, visited schools where dental conditions were extreme, extracted dead roots, cleaned up the teeth, and made arrangements with the Dental College and with many private dentists to have the worst cases cared for. He also gave a course of lectures to the nurses, thus fitting them to make more careful inspections of the children's teeth.

On February 15, 1912, six additional nurses, and on March 21st, ten additional medical inspectors were appointed. This increase in the staff gave opportunity for a daily service in the schools by both doctor and nurse.

After Christmas, Easter, and midsummer vacations the medical inspectors aided by the nurses make the first routine inspection. Only gross physical defects and diseases are noted during this inspection. All subsequent inspections are made by the nurses at intervals of two weeks. The inspection of the hair and in general the inspection of the teeth is left to the nurse. After the classroom inspections the children requiring treatment are sent to the room set apart for that purpose, usually called the Medical Inspection Room. Children falling under the prescribed



BEFORE THE SCHOOL DENTAL CLINIC

course of treatment, whose parents are unable to pay, are treated by the nurse. Children having ailments outside of the prescribed course of treatment and physical defects requiring operation are sent to the hospital clinics. Those with pediculi in the hair are given printed instructions in a sealed envelope, and are sent home to have the head combed at once with a fine-toothed comb. They are told to return as soon as it is done. The dirty boy is given soap and a paper towel and is sent to wash himself. Tooth-brush drills are held at intervals. Children are told to bring their brushes to school, and the nurse instructs them in their use. They are also taught how to cut and clean their nails, and the fact emphasized of the necessity of keeping the nails as clean as other parts of the body. The nurses also see that the children carry handkerchiefs and use them. They are taught the importance of keeping the nasal passages clean to prevent catarrhal conditions, and are given demonstrations of how to use the handkerchief by nose-blowing drills.

Home visits constitute a very important part of the health supervision. These visits are made after three o'clock. The parents are visited in cases where some instruction is necessary or some information is required. On clinic days the

nurse may take several children to the dispensary, to the eye clinic, or to the nose and throat clinic, which are held on different days. This is done only when the parents are unable to go themselves. Appointments are made for tonsil and adenoid operations, and prescriptions are obtained for children needing glasses. Where the parents are unable to pay the Board of Education pays for the glasses. Opticians have very generously given glasses for this purpose to the Board of Education at cost price. Parents who persistently neglect or refuse to provide treatment for children obviously suffering and in danger of becoming permanently injured are reported to the Juvenile Court, and are given a choice either to provide a certificate from a reputable oculist or physician that such treatment is not required, pay a fine, or have the child cared for. This experience is an education for the parent. A father allowed to go on suspended sentence, if he provides proper care for his child, has a very salutary effect on the community in stimulating others to look after their children.

The highest objective of all efforts is to teach children how to *be* healthy and how to *stay* healthy. This health supervision work should be along the line of preventive medicine. When children are

taught the simplest lessons of general and personal hygiene, and the fundamental laws of health, they have learned a great deal of how to live and how to care for their bodies. A natural sequence of these efforts is better care of the sick and the physically defective. Towards this end the Board of Education opened a Forest School where anæmic and backward children may be sent during the summer months. These children are taken to a beautiful park on the lake shore early in the morning and returned to their homes at night. In this park an old ice-cream pavilion was fitted up for the purpose of kitchen and dining-room. Under the trees accommodation for classes was made. This consisted of picnic tables, benches, and blackboards supported on posts at the head of the table. These classes are within speaking distance of each other, but no difficulty was experienced by the teachers in retaining the attention of their pupils. One class might be singing, another doing plasticine work, while a third was having a geography lesson, yet every pupil in each class was eagerly attentive to his own lesson. An open classroom was provided on the roof of one of the down-town schools where delicate children are kept out all winter. Food and warm clothing are provided and the school work is

taught according to the child's needs rather than according to a rigid curriculum.

Another progressive feature is the installation of dental chairs in the schools. The School Nurses equipped one dental room at a cost of five hundred dollars. This is considered a model. The dentists work from nine to twelve. Extractions and fillings only are done in the schools at present. There are now eighteen schools equipped for dental clinics, each of which is a center for nearby schools.

HAMILTON, ONTARIO, CANADA

In December, 1907, the Board of Health in Hamilton appointed Miss Emma J. Deyman as School Nurse, the first appointment of the kind in Canada.

In April, 1912, two more nurses were appointed.

There are eighteen schools under supervision with an attendance of 9194 pupils. The initial salary was \$500 which was later increased to \$550 per annum.

MONTREAL, QUEBEC, CANADA

In 1906 the Montreal Women's Club was instrumental in starting medical inspection of schools.

In January, 1908, the Board of Health employed two nurses, one of whom was a member of the Victorian Order of Nurses. The initial salary was \$600, which was later increased to \$720.

Each nurse was responsible for twenty-five schools. The hours on duty are from nine to five daily.

In March of the same year the Protestant Board of School Commissioners also appointed two nurses, and have since added a third nurse.

WINNIPEG, MANITOBA, CANADA

The Winnipeg Public School Board appointed its first school nurses in October, 1909, Miss K. A. Cotter and Miss A. E. Johnston being the pioneers. There are at present four nurses. The maximum salary is \$875 per annum. There are thirty-five public schools and three high schools with an attendance of 18,976 pupils. Inspection is made irregularly. Clerks are appointed to assist doctors and nurses with clerical work.

VANCOUVER, BRITISH COLUMBIA, CANADA

The Board of Education in Vancouver appointed Miss Elizabeth G. Breeze as its first school nurse, March 1, 1910. Later three more nurses were appointed.

There are thirty-two schools under supervisor which are visited once or twice a week by the school nurses, according to size and locality.

Classroom inspections are made once every month in the junior classes, the higher grades being inspected twice during the term, or oftener if required.

The hours on duty are from 9 A.M. to 5 P.M. on school days and from 9 to 12 on Saturdays. The minimum salary is \$75 per month for twelve months, and the maximum \$100. Car fare is given in addition. Nurses are requested to take swabs when a suspicious sore throat is observed. They supervise sanitary conditions of schools, and report on printed forms regularly to the medical inspector. They also provide clothes for destitute cases, and do general social service work.

REGINA, SASKATCHEWAN, CANADA

The Regina Public School Board initiated its system of medical inspection February 1, 1911, by employing Miss Jean E. Brown as school nurse.

There are six schools with 2846 pupils. One day a week is given to each school.

A routine examination of the pupils is made twice a year.

The hours on duty are from nine to five. The initial salary was \$1000 per year, with an annual increase of \$100, until \$1200 is reached. In 1913 a second school nurse was appointed.

VICTORIA, BRITISH COLUMBIA, CANADA

The Board of Education appointed Miss Blanche Swan as first school nurse in 1912.

A medical inspector was appointed in 1909.

There are seventeen schools with a school population of four thousand children. The nurse visits the schools each week.

The hours on duty are from nine to four daily.

EDMONTON, ALBERTA, CANADA

The School Board in Edmonton appointed Miss Jane English its first school nurse on May 17, 1912. A second nurse was appointed in October, 1912.

The initial salary was \$1000 per annum.

There are eighteen permanent and fourteen temporary schools with an enrollment of over seven thousand pupils.

Hours on duty on school days are from nine to four. Saturdays nine to twelve noon. The School Board pays for glasses when parents are unable to do so.

HALIFAX, NOVA SCOTIA, CANADA

A school nurse has been appointed to assist the two medical inspectors who have been inspecting for sometime. Her initial salary was \$600 per annum.

CHAPTER III

ORGANIZATION

THE school nurse will find that her work will have to be planned according to the number of schools, their distances apart, the number of pupils in each school, and the distance of the homes from the schools.

The organization of a system of health supervision of school children will thus depend largely upon the size of the community and its social problems. In the smaller rural and even urban communities practically every family has its own family physician and dentist, and is able to pay for medical and dental care. In such communities a school doctor is not required, for the school nurse refers every child with suspected disease or physical defect to the family dentist or doctor.

Here, as in poorer districts, the nurse will find it necessary to visit the parents and carefully explain why she thinks the children need examination or treatment. It is, perhaps, not unnatural

that in these matters the school nurse wields a tremendous influence over the parents. When the dentist or doctor tells them that their children have certain physical defects needing attention, parents are apt to think the dentist or doctor is "looking for a job." They realize without explanation that the school nurse has no monetary interest in the matter, and that she must be speaking only in the interest of the children. The family physician or dentist frequently does not know of these defects, simply because the parents, being ignorant of the condition, have not consulted him. By persuading parents to take their children for examination, the school nurse may succeed in having all serious defects remedied. Possibly the nurse may send children for examination whose condition does not need special treatment, but this should not be considered an error. It is far better that she should send some who do not need treatment than that one who does need it should be overlooked. Besides, it will probably be found that all such sent for examination, although not in need of treatment, were seriously in need of warning and direction in such an important matter as breathing, diet, sleep, clothing, ventilation, or physical exercise. Such direction may be of even greater importance than treatment.

In poorer districts the school nurse's work will be somewhat different. The School Board should employ the medical officer of health or some other physician to examine those children whose parents are too poor to pay for medical service; or better still, to examine all children, referring those able to pay to their family physician, and giving directions himself for the care of others. The school nurse will be able to treat many minor conditions; it will be necessary to take others to the dispensary or the hospital for treatment or medicine. She should constantly have in mind the protection of the community as well as the home, and always be on the alert for communicable diseases. Her friendly interest in the home should easily enable her to persuade parents to report suspected contagious disease, so that epidemics may be avoided, and children's lives saved.

Ignorant people are thus brought to see the value of sanitary laws and to assist in the enforcement of their observance. The fact of the nurse being in constant and regular touch with the homes is in itself a safeguard to the whole community. Her intimate knowledge with the requirements of the law enables her to be a guide to the family, to see that unsanitary conditions are

removed, and that premises and homes are kept clean and wholesome.

A sensible school nurse, with good judgment, discretion, and enthusiasm may be a powerful factor in the general improvement of a community.

The nurse will find some children absent from school for other reasons than sickness. She will find children without shoes, clothes, or even food. Therefore, she should be in close touch with all the relief agencies of the community, and see that these wants are relieved. By her home visits she will practically eliminate truancy by ascertaining home conditions and reporting them.

When the State requires a complete physical examination of every child entering school, it is important for the School Board to have their own medical inspector. The time is surely coming when this will be required of every School Board. The question of the controlling authority of school medical, dental, and nursing services is an important one. Too frequently these services have been initiated in a haphazard way. The writer has had experience with both the Board of Health (in New York) and the Board of Education (in Toronto) and believes the School Board is the proper governing body.

The primary aim is to teach the child how to live so as to avoid defect and disease. Why should not the Board of Education first teach the child how to keep healthy! Much heartier co-operation of teachers, pupils, and parents is obtained where the service is part of the school work. The school can so much more easily and sympathetically be made the center of the work. It is the natural unit in the community for all efforts in behalf of the children and the homes. But more will be said of this subject later.

Very desirable results have been obtained in small urban or rural sections by employing a competent school nurse for one month to demonstrate how such work is carried on. During this experimental work a school nurse should be paid a salary of at least twenty-five dollars per week. Only nurses who are quite familiar with school nursing should undertake such work. In a community where there is only one small school the nurse could also do district nursing or rural Red-Cross work, so that she could live in the neighborhood and still be able to earn a proper salary. Where a nurse undertakes these different kinds of work, the time she gives to each, and the amount each organization is to pay towards

her salary should be definitely arranged. In this plan, it must not be forgotten that the school children should be examined at regular intervals.

In communities where there are several schools, transportation for the nurse is quite a problem, not only in getting from one school to another but also in visiting the homes. But this should not prove an insuperable difficulty. Each district will have to work out its own plan. Where the nurse is provided with a horse and buggy or a motor car, she can, of course, carry on the work in a much larger district. Under ordinary circumstances three to six rural or village schools ought to be the maximum. In a town or city where the population is congested, 500 to 1000 or 2000 pupils is plenty for one nurse, and this will depend very much on social conditions. Where a nurse has her work well planned, she will cover her district much more easily and rapidly. But it must be remembered that where a nurse is constantly rushed she will not be able to do as good work. She must have time to talk to parents, to teachers, to physicians, and to the children; she must have time to make clerical records and reports, to plan and organize. Concentration of effort produces greater efficiency.

HOW TO BEGIN

Where a nurse has been appointed to do school nursing in either a rural or urban district she should begin by consulting with the members of the School Board, the principals and teachers, and the medical officer of health. If there is a school medical officer, consult with him as to the general plan of the work. A schedule of school inspections, treatments, home visits, and district work should be arranged with the principals, and a copy sent to the central office of the Board. As soon as possible a card system of records and reports should be prepared for the purpose of carrying on the work. The clerical work should be kept at the minimum consistent with an intelligent record of the work done. Too many forms will be a burden, and make complex what should be simple. Too often this mistake is made. Every form should have a very clear and definite aim. In the last chapter of this book a full set of forms will be given, sufficient for a large city where school medical inspectors, dental surgeons, and nurses are employed. In small communities, only a few of these will be required and the wording can be varied to suit local conditions or customs.

Where a nurse has charge of more than one school, the schools should be grouped, so that she can visit one, two, or three schools each day in the week, or twice a week, or daily for one week or a month, according to the plan evolved and the needs of the different school districts. But whatever plan is adopted, visits should be at regular intervals and a definite time given to each school. Irregularity will minimize the good accomplished and depress interest and enthusiasm. And the school nurse needs to be a well of eternal freshness and enthusiasm. If the schools are not too far apart and of average size, a nurse can visit a group of four schools daily, spending about one hour in each. The important thing for a nurse to remember in making her plans is not to endeavor to do the whole work of a school all at once. Much of it may appear urgent to her, but she should proceed systematically and in the end results will be far more satisfactory. She will overtake the work in good time, and jumping here and there with desperate energy usually fails to accomplish the much-desired object. In each school the nurse should have a screened space, or better, a room allotted to herself. Here she should have at least two or three chairs, a table or desk, a file, a cabinet for supplies, two granite hand-basins, and a roll of paper towels.

For a beginning the following supplies should be obtained.

Absorbent cotton (good quality).....	1 pound
Gauze (plain).....	5 yards
Bandages 1", 2", 2½" wide.....	4 of each
Tincture Green Soap.....	1 quart
Vaseline.....	1 pound
Boracic Acid Powder.	1 "
Boracic Acid Solution.....	1 quart
Zinc Oxide Ointment.....	½ pound
White Precipitate Ointment.....	¼ "
Sulphur Ointment.....	½ "
Flexible Collodion.....	4 ounces
Tincture Iodine.....	1 ounce
Mercury Bichloride tablets.....	500
Wooden tongue depressors.....	500 to 5000
Granite basin.....	1 small

These supplies should be kept in a locked cabinet and a duplicate key should be given to the principal in case of need when the nurse is not there. This cabinet is not the place for the nurse's lunch, or her fruit, or her gloves, or toilet articles. The different supplies should always be kept in the same part of the cabinet, so that it is easy to find what is wanted, and the cabinet always appears tidy and in order. A list of the supplies should always be kept on the inside of the door of the cabinet. The method of ordering supplies will

vary in different communities. It is not possible to say how long supplies will last; the nurse should always be careful to send in a renewal order before the supply is exhausted. It is better to order systematically, say every one, three, or six months.

Each morning the nurse should first report to the principal to see if he has anything to discuss or report. In fact it should always be remembered that the principal is the head of the school, and no new departure undertaken before consulting him about it. He should be consulted as to the best time for inspecting classes, having pupils sent to the nurse's room for special examination, advice, or treatment. The regular work of the school should be interfered with as little as possible. It is this consideration for those already working in the school combined with the fact that the nurse is one of the school staff that makes for coöperation, harmony, and success.

On the occasion of her first visit, she should ask the principal to introduce her to the assistant teachers, if she has not already met them. She should make arrangements with him when she is to do her work, such as making special examinations, giving instructions, explaining about physical defects, giving treatments for minor ailments, and making the regular records and reports.

READMISSIONS

The first morning duty should be the examination of all pupils who have been three days or more away from school. If it is the custom of the principal to have all pupils report to him after absence, he should see that the pupil takes the excuse from the parent and a report of the number of days absent, to the nurse. The object of this examination is to prevent any pupil returning to school after having a communicable disease or from a house where there was a communicable disease, unless the requirements of the law have been fulfilled. The children should never be asked if they have had scarlet fever, measles, chickenpox, etc., but should be asked if they had a sore throat, cold in the head, rash, or other questions that will bring out the information you want without indicating to the child what you are after. Sometimes, of course, the child tells you at once, but do not always conclude the fact is positive because the child has made the statement. If you have definite information from the home that is sufficient, but in all other cases careful enquiry should be made of the parents. In this way many cases of contagious disease will be discovered that were never reported to the health

authorities, and the rest of the school protected. It is well, I think, to keep a contagious disease record book; an ordinary exercise book could be used for this purpose. It should be ruled vertically for the following headings: Name, address, age, disease, date of exclusion, date of return, room, remarks. At the end of the month a record should be made, such as:

Scarlet fever.....	2
Measles.....	10
Chickenpox.....	4
& etc.....	

Any child who has to be excluded should be given the regular exclusion card, and sent to the principal who officially makes the exclusion. Enquiry must be made as to whether there are any others of the same family, and, if so, they should also be excluded. The exclusion card should state the number of days or weeks the child is excluded.

CLASS INSPECTION

When visiting a classroom at any time, the nurse should first knock, then enter, greet the teacher, and ask permission to inspect the pupils. Class inspection should be at regular intervals and

as nearly as possible at a regular hour. This should be arranged in consultation with the principal and teacher, so that a time may be chosen most suitable to all and causing the least disturbance to the class. Nevertheless, a teacher should not lightly ask the nurse to postpone her inspection, because if that were often done it would seriously disarrange her work so that her inspections would degenerate into spasmodic attempts instead of being systematic, regular, and efficient. This time should be, if possible, immediately after the nurse has finished the morning readmissions.

At the first inspection and perhaps at several subsequent ones, it is well to explain to the pupils what you wish them to do when they come forward for inspection. Ask the teacher to send the pupils one row at a time, thus allowing the teacher to go on with her work with the rest of the class. Have the teacher insist that the pupils in the seats do not sit staring at those being examined. Naturally the first two or three times will be the most difficult, but the inspection will soon cease to be a novelty and become a routine of the school work. The nurse should select a window where the light is best for her inspections, preferably at the rear of the room. If possible the pupils

should approach this window so that they are facing it. While the child faces the window directly the nurse should stand a little in front and to one side, so that she does not obstruct the light. Besides obtaining better light by standing a little to one side, the nurse can use her body as a screen, protecting the child being examined from the curious gaze of the rest of the class. The nurse should be provided with a box of wooden tongue depressors, which may rest on the window sill. She should also have a paper (newspaper or brown wrapping paper) folded as a funnel, into which she puts the *used* depressors. A different tongue depressor is used for each child, or half a one may be used if examining around the teeth. Do not use one half on one pupil and reverse it to use the other half on another. Always break the depressor, using the separate parts on the different children. There is absolutely no excuse for a nurse or doctor throwing used depressors on the floor, desk, or chair. It is a dirty habit, even if it were not dangerous. The nurse should take the used depressors with her when leaving the room, and she should see that they are burned. When the pupil comes forward he should hold out his hands, palms upward, thrusting out his arms so as to expose the wrist and part of the arm. The hands may be



CLASS INSPECTION BY SCHOOL NURSE

dirty from play but if the arm is unclean, it is usually pretty good evidence of neglect, and the habit of uncleanness. The condition of the skin is observed, for the evidences of chapped hands, sores, cuts, or desquamation. The desquamation of scarlet fever should not be confounded with other things such as ichthyosis. If there is suggestive epithelial desquamation, do not ask the child if he has had scarlet fever, but ask about the recent appearance of a rash or sore throat. Endeavor to get some confirmatory statement by indirect questions.

Next, the child places the tips of the index fingers on the lower eyelids and draws the lids down so they can be examined. Conjunctivitis is too commonly neglected even in pretty good homes, and granular lids are not uncommon. While the hands are in this position the backs and finger nails can be examined as to condition of skin and cleanliness. A few words of encouragement or reproof, even daily if necessary, will help to form cleanly habits.

Next the mouth is examined, first the gums and teeth and development of lower jaws. A tongue depressor is needed to examine the teeth more than the throat. The depressor can be broken in two, as a half one is sufficient for your purpose.

Here there are many important subjects to consider. The great subject of oral hygiene, early attention to decay, mal-eruption, or poor development of the jaws. Many a child goes through life with its features deformed, because the physical defect was not discovered early enough. The importance of the preservation of all teeth should be deeply impressed, but more especially the preservation of the six-year molars, or first of the permanent teeth. As soon as possible, a half-hour lesson should be taken with the whole class, on the first set of teeth, time of eruption, care, and value in mastication. It should be pointed out that the preservation of these teeth in a healthy condition until they fall out, protects the body from toxins that are harmful to the general health, preserves the gums and jaws from disease, so that the mouth is in a healthy condition when the second set of teeth arrive. Many times, too, the second teeth do not properly erupt because of the neglect of the first. Every school nurse needs to learn this commandment and observe it scrupulously at all times. Never put even the tips of your fingers in a child's mouth. It is astounding how carelessly nurses and even doctors and dentists will do this. It is unpardonable, and is a direct violation of the personal hygiene one should

practice as well as preach. Next the tongue is examined. It is remarkable and distressing, how frequently even healthy-looking children, have extremely dirty, foul, heavy-coated tongues. This is usually due to improper diet, cakes, candy, chocolate, insufficient mastication and bolting of food, and consequent constipation and digestive disturbances.

Examine next for cleft palate, enlarged tonsils, and chronic inflammatory condition of the pharynx. It is rarely necessary to use a tongue depressor to examine a child's throat. If the child fails to give you a good view of the throat, take a moment to teach him how to do so. Ask him to stick out the tongue while opening the mouth wide. Scarcely one child in a hundred will fail to give you a good look at the tonsils and pharynx. It is well to get along without the depressor for examining the throat, for children do not like it, and you usually have a great deal of trouble in attempting to use it. Then press your thumb to the tip of the child's nose which dilates the nostrils sufficiently for you to examine it as to cleanliness and possibly also as to inflammatory conditions. Press your thumb to each side of the nose alternately while the child breathes deeply with tightly closed mouth. This will give you some evidence

whether there is any obstruction to nasal breathing such as deflected septum, polypi, or adenoids. Next examine the ears and neck for cleanliness. Tell them of the corners of the ears that need to be kept clean, the back of the ear, and back of the neck as well as the face. Lastly inspect the hair (do not examine before the class). In the case of girls this should be tactfully done. Place the left hand on the head behind the ear, push hair upward and backward, while you take hold of the lobe of the ear with your right thumb and index finger and pull forward as if examining the back of the ear. This is a very common place to find nits or ovæ, if they are present. If you are not satisfied with this casual inspection, ask the pupil to go to your office after you are through your inspections.

Nothing much should ever be said about any child's physical defects before other pupils and what is said should be said in a low tone. It is permissible to say something about cleanliness as this is not a misfortune, but evidence of carelessness or laziness. It is not unkind to ask, if a boy is very unclean, whether he has soap and hot water at home and what they are for; that it takes some hard work every day to keep clean. Lastly note how many children you have examined.

SPECIAL EXAMINATIONS

When the class inspections are completed, the nurse prepares her small dispensary, and sends to the classroom for the children requiring special instruction, examination, or treatment, or directions as to infected heads, sores, disease, or physical defects. Where it is necessary to examine more fully or give special examination, the pupils should be instructed to come to the nurse's room where such instruction is given or examination of the pupil is done in private, no one else being present.

There is no excuse for a nurse examining a child's head for pediculi in the presence of other children, or even of teacher, no matter what kind of a home he comes from. Occasionally it may be necessary to have the teacher present as a witness when parents deny their children have pediculosis. If pediculosis is very common in a room and it is thought necessary to go over every pupil, a screen can be placed in one corner where there is a good light, and the pupils asked to come behind it for examination, one at a time. This can be done quietly, quickly, and without hindrance to the regular school lessons. Attention should be kept to the lesson and away from what the nurse is doing. The hair should be carefully separated,

not by the fingers, but by small sticks, such as wooden toothpicks, which are used on one child only, or with two nickle-plated probes which are disinfected after each child has been examined. In preparing the dressing table for treatments, the nurse should be very careful in seeing that everything is properly dusted, the table covered with clean wrapping paper or towels, the basins and water clean, and in fact every dressing made with proper antiseptic precautions. Where treatments are given for cuts or sores, or such things as ringworm or scabies, they should be made carefully and thoroughly with every precaution being taken against the spread of contagion. Dressings should be applied securely and neatly, so that the child is comfortable and not a curious spectacle for the gaze of other pupils. It is inexcusable for a nurse to leave soiled absorbent cotton, dressings, bandages, or tongue depressors on the floor of her room, and it is just as reprehensible to leave them on her table or to throw them carelessly in the waste-paper basket. All used dressings, bandages, and tongue depressors should be rolled in a paper and given to the janitor to burn. A careless and untidy nurse is worse than useless as a school nurse; she is a public danger that should not be tolerated for a moment.

CODE

At the class inspection or at the special examination in the nurse's room, the pupil's name, address, disease, or defect must be recorded on the class index card for filing in the school. Disease and defect should be recorded by code so that not even the child knows what is recorded. The code used is immaterial; any nurse can devise her own. The simplest perhaps is to use numbers for diseases and letters for defects. The commonest diseases and defects should be placed first, the rarer conditions last. It is not necessary to code every known disease or defect, but rather only those you are commonly finding among the children you are examining.

The inspection of a class of fifty pupils should take from ten to fifteen minutes and should in city schools be done weekly or at least fortnightly. It will not be possible to do this where one nurse has several school districts, and schools are miles apart. In sparsely settled districts the plan of organization will have to be modified to meet the necessities of the case. The first examination of this kind may cause much merriment or surprise, and time will be lost; such an inspection may take half an hour, or longer, because the work is un-

familiar to everyone and records must be made on the class index cards. In these first examinations very frequently the teacher is interested enough to help, or the nurse can tactfully enlist her services by smilingly asking her if she would mind making the records on the index cards, as she proceeds with the inspection. The teacher has the advantage of knowing the names of the pupils and perhaps quite a bit also about home conditions. After the routine is established, however, the class can be gone over more rapidly. The nurse must constantly remember she is interrupting the class studies, more or less, and she should make the inspection as quickly as possible, consistent with efficiency. In concluding the class inspection, the nurse should ask the teacher about absent pupils. In this way she learns of any illness or other condition necessitating a visit to the home. This has an important bearing on the regular attendance of pupils for they learn they cannot stay home for trivial reasons, and parents recognize this also.

NOSE-BLOWING DRILLS

It is surprising the small number of children who carry a handkerchief, and remarkable the small number who know how to use one. Ninety-nine

children in a hundred will simply remove the external discharge without attempting to clear out the nose. Ask children what they wash when getting ready for breakfast and school in the morning and they will tell you face, eyes, ears, neck, and hands, but they will rarely tell you the nose. And yet a moment's talk with them will make them realize that this should be part of the morning wash, for they know that the function of the nose is to remove dust and impurities from inspired air. A bale of cotton cloth should be kept in the school, and cut into convenient lengths for use as handkerchiefs by children who lose theirs or who persistently come without one; or a supply of paper handkerchiefs could be kept in the school for the purpose. These could be used for the day and then burned. It is necessary to teach children how to use a handkerchief. This can be done by the nurse taking the class in a nose-blowing drill. She should see that each child gets the nasal passages thoroughly clean. This drill should be taken at every visit of the nurse to the classroom of the younger children. In a very short time it will be found that colds and catarrhal conditions have remarkably diminished. These drills also inculcate nose breathing, for this can be accomplished so much more easily with the

nasal passages clear. This again teaches the habit of cleanliness, makes the child much more comfortable and attractive, and preserves the health.

When readmissions, inspections, instructions, and treatments have been completed and records made, the nurse is ready to leave for the next school. If there is a medical inspector all cases for diagnosis are referred to him before any action is taken. If there is no medical inspector the nurse must act on her own best judgment. In the case of suspected contagious disease, of course, the child must immediately be sent home for diagnosis by the family physician.

HOME VISITING

This is a very important part of school nursing. A nurse needs to be tactful, courteous and cheerful, slow to take offense and as persistent as an Eastern mendicant. Home visiting is usually done from three to four o'clock or any time in the afternoon after the work at the schools has been accomplished. The nurse's first care is to gain the good will of the parents and she will generally easily succeed, if she tactfully brings home to them that the great controlling motives in what she wishes done is her personal interest in the welfare of the



NOSE-BLOWING DRILL. TORONTO, CANADA

children. If she comes as one wielding authority that must be obeyed, she will always fail to gain the best coöperation, although she may gain her point. Not infrequently the parents are prejudiced against the nurse before they ever see her, for they conceive the idea that she is interfering with their authority over their children. Some will receive her cordially, while others will pour a tirade of abuse upon her unlucky head. If the recognized need of the child is the compelling motive in her work, she will not easily give up, but like a skilful general, she will retreat or advance, outflank or make a frontal attack, until the parents capitulate. Her great weapons of attack will be unvarying courtesy, amiability, persistency, and child love.

In making her first visit, the nurse should give her name and say she is the school nurse. If she is able to say that she called because she heard Johnny was sick, this generally paves the way for a cordial understanding. If this is not the case she should first enquire about Johnny's school progress and then proceed to explain she found he had carious teeth, eczema, ringworm, a discharging ear, a defective eye, or whatever the ailment may be, and encourage the mother to tell what she has been doing for it. It will frequently be found that

the mother has been trying to do something but has not appreciated the seriousness of the condition. This will bring up the question of cost, and with some ingenuous questioning the nurse should be able to learn something about the finances of the house. This should never be sought for mere curiosity. It should be sought only because the nurse is desirous of knowing how she can best help by advice or information or direction. Sometimes the nurse may be unceremoniously informed Johnny's condition is none of her business, and have the door slammed in her face. But it is her business, the very thing she is paid for, partly by this same mother. This discouraging reception, therefore, must not be accepted as the final answer. A second or a third visit may prove more successful. The nurse must show strategy in her campaign. Something *must* be done for Johnny. One school nurse reported ninety-nine visits to one home to gain her objective. The nurse who fails in her home visiting may as well give up school nursing.

If there is a family physician suggest his advice after explaining what the defect appears to be. If the parents say they cannot afford a physician and what you have seen and learned appears to confirm this statement, explain that there are dis-

pensaries and hospitals, throat clinics, skin clinics, eye clinics, dental clinics where free treatment can be obtained. The nurse should appeal if necessary to the money basis, pointing out that the boy or girl will later be able to earn more money because of this necessary attention. The nurse should know where the hospitals, dispensaries, and relief agencies are, the hours of the different clinics, and the procedure to obtain admittance for free treatment. If the mother is unable to go with the child to hospital, dispensary, or dental clinic because of illness, or because she is the only wage earner of the family, the nurse should take him, after getting the mother to sign the request card for that purpose. This signed request is necessary to relieve the school authorities of legal responsibility.

The nurse should not feel that her duty is done when the parents are notified and the disease or defect is explained to them. She must not stop till something is done. She must remember it is her privilege as well as her duty to save children from deformity, disease, and death, to lay a physical and moral foundation for splendid womanhood and capable manhood. If parents have failed to secure the necessary medical, surgical, or dental treatment through ignorance, poverty,

or neglect, the nurse has this splendid opportunity to preserve and save child life.

Every home visit must be recorded on the nurse's daily report card and on the pupil's reference card and the case terminated when the defects are remedied. Thus far I have spoken only of the care and treatment of children with disease or physical defects. But this is by no means the important part of school health supervision. I say "health" supervision, rather than "medical" supervision, because I think children should be taught to keep free from disease, how to keep healthy, and develop normally. It is still true that an ounce of prevention is worth a pound of cure; *that it is easier and more economical to educate than to reform or to imprison.* To-day preventive medicine is recognized as the highest and greatest aim of medical science. Far too many parents, even those well-educated, are absolutely ignorant of the simplest laws of health, and what mothers need is a knowledge of the laws of health rather than medicine for their children. The mother as well as the child should be instructed in the personal care of the body, the importance of ventilation, a proper diet, suitable clothing, amount of recreation and sleep, the irreparable damage done by tea drinking, coffee drinking, or

candy and pastry eating to a young child. General talks should be given to children in the classroom and individual advice or instruction in the nurse's room. Nurses, dentists, and doctors must do this work and not the school-teachers. Tooth-brush drills, nose-blowing drills, nail-cleaning drills, classes in sewing, mending, and cooking are but special opportunities to make practical demonstrations of lessons taught.

CASE CONFERENCES

If there is not a good system of relief agencies, the school nurse could be instrumental in bringing about case conferences. These conferences are conducted in the following manner. Regular meetings are called of representatives from social workers, district nurses, settlement workers, school nurses, ministers, deaconesses, and others doing similar work. All these workers may be interested in some family in the school district. The school makes the best center of administration of relief work. It is non-denominational and particularly interested in the children. At this conference, the different associations state the families in each school district they are interested in. Quite probably it will be found that several associations have interested themselves in the same

family. After the situation is clearly understood, the family should be placed under the care of one agency or person, who would be responsible for its welfare. The aim in all these cases is to relieve the immediate needs and to guide and direct their own efforts until they are ultimately able to provide for themselves. Relief work should not demoralize or pauperize families who have been unfortunate, but should be an inspiration to them to achieve their own livelihood. Such coöperation in relief work will prevent overlapping and that pauperizing so much deplored. Records should be kept by the Central Case Conference Association and should be available at any time for reference. This would prevent indiscriminate giving which fails to bring about lasting results. These associations are sometimes known as Neighborhood Workers Associations. Such an organization is only needed in the larger cities.

The school nurse should constantly keep before the teachers, trustees, and the people the desirability of making the school the center of the social life of the district. Where the school has an assembly room, it is easier to arrange for concerts, debates, mothers' meetings, or social entertainments. Where there is no assembly room a classroom may be used. But what could be



HOME VISITING

equipped in every school at a very small cost is a small compact kitchen with stove, pantry, utensils, and dishes sufficient to provide easily and readily for all social entertainments. Schools would be used much more frequently for meetings if conveniences were at the school for the preparation of light refreshments. Of course, such a use of the school should be allowed only to responsible organizations of the district.

CHAPTER IV

SUGGESTIVE RULES AND REGULATIONS FOR THE GUIDANCE OF MEDICAL AND DENTAL INSPECTORS AND NURSES

GENERAL RULES

ALWAYS be courteous and sympathetic with parents and children, and thus avoid much needless resentment.

Absolutely no suggestions as to treatment shall be given, except as hereinafter directed.

Medical inspectors and nurses must promptly report all discovered cases of contagious disease to the Board of Health, thus rendering efficient assistance in eliminating this menace to the community.

The following diseases must be referred to the Principals for exclusion: Smallpox, scarlet fever, diphtheria, measles, German measles, mumps, chickenpox, acute tonsilitis, whooping cough,

open cases of tuberculosis, and such diseases of skin, scalp, and eye, as, in the judgment of the medical inspector, should be excluded.

Except in cases of sudden illness, request for leave of absence must be forwarded to the Department of Medical Inspection at least one week before such leave is required. In case of inability to report for duty on account of illness, notify the Department of Medical Inspection by telephone. A written notification must follow within twenty-four hours. When reporting for duty after absence, a certificate of illness from the attending physician, must be presented.

Daily reports must be forwarded in time to reach the Department of Medical Inspection by the first mail on the following morning.

At each school visited a time-book must be signed, stating the time of arrival and departure.

All cases requiring treatment must be referred, by card in sealed envelope, to the family physician.

Medical inspectors and nurses must not remove the clothing for examination of children, without the consent of the parent or guardian.

Medical inspectors and nurses must not interfere in any way with the school discipline.

DUTIES OF MEDICAL INSPECTORS

Each medical inspector is assigned to a group of schools.

The hours of duty are from 9 A.M. to noon.

Each medical inspector shall prepare a time schedule for his group of schools which must be forwarded to the Chief Medical Inspector for approval. A copy must be given to each principal.

Morning inspection should be completed before 11 A.M.

Complete physical examinations will be made after the morning inspections are completed until 12 noon.

MORNING INSPECTIONS

Morning inspections shall consist of inspection of children referred by the principals and nurses to the medical inspectors for examination, for major and minor contagious diseases, marked physical defects, and for vaccination of those children whose parents have requested it.

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No child shall be admitted to the classroom who has been absent two or more days for any unassigned cause before being examined by the medical inspector, if the principal or nurse has reason to believe that the child has been absent on account of illness.

All suspected cases of major contagious diseases must be excluded for the day. It will be the duty of the medical inspector to visit the home of the child within twenty-four hours, to make a definite diagnosis. Cases proving contagious will be reported directly to the Board of Health on the forms provided, and non-contagious cases will be permitted to return to the classroom.

Children with the following diseases will be excluded for time indicated, as follows:

<i>Disease</i>	<i>Exclusion for Disease</i>	<i>Exclusion for Exposure</i>
Smallpox	8 weeks	2 weeks
Scarlet Fever	6 weeks	2 weeks
Diphtheria	3 weeks (or until two negative cultures have been obtained)	2 weeks (or until two negative cultures have been obtained)
Measles	3 weeks at least	2 weeks
German Measles	2 weeks	2 weeks
Mumps	4 weeks	2 weeks
Chickenpox	3 weeks	2 weeks
Whooping Cough	6 weeks at least	3 weeks

In cases of suspected diphtheria, a culture must be made at once. Culture media will be provided by the Board of Health at stations near all schools. A list of these stations will be supplied to each medical inspector.

Each child excluded from school must be furnished with an official exclusion card (form 8), properly filled out and signed. In cases of persistent neglect of the advice given, the parents shall be asked to confer with the nurse and medical inspector at the school (form 14).

Each pupil referred to the nurse for instruction or treatment must be given a card upon which is written the child's name and code number of the disease.

The wooden tongue depressors supplied must be used to the exclusion of all other tongue depressors, and used only once.

CODE

1	Acute Conjunctivitis	A	Enlarged Tonsils
2	Acute Coryza	B	Carious Teeth
3	Diphtheria	C	Adenoids
4	Favus	D	Enlarged Glands
5	Impetigo	E	Cardiac Disease
6	Measles	F	Pulmonary Disease

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7	Parotitis	G	Defective Palate
8	Pediculosis	H	Anæmia
9	Pertussis	I	Defective Nasal Breathing
10	Pediculosis		
11	Ringworm	J	Orthopedic Defects
12	Scabies	K	Chorea
13	Scarlet Fever	L	Defective Vision
14	Acute Tonsilitis	M	Defective Hearing
15	Trachoma	N	Epilepsy
16	Varicella		
17	Granulated Eyelids		
18	Blepharitis		
19	Tuberculosis		

READMISSIONS

Children returning after smallpox, diphtheria, and scarlet fever must present to the medical inspector a certificate from the Board of Health of disinfection of the home.

Children returning after other contagious disease will be readmitted at the discretion of the medical inspector.

A slip readmitting child must be sent to the principal according to the following form:

Mary Jones,

Readmitted March 20, 1911.

J. H. A.....M.D.

ROUTINE INSPECTION

At the opening of school after midsummer, Christmas, and Easter holidays each medical inspector shall make a routine class inspection of schools in his charge, for the purpose of detecting any cases showing evidence of contagious disease or marked physical defects. This should be completed by the end of the first or second week, and should be conducted as follows:

The inspector should stand in the classroom with his back to a window, and have all the pupils file past him. The pupil will show palms of hands and wrists, will pull down the eyelids showing the conjunctiva, and open the mouth to expose the teeth, tongue, and throat.

Name of child and diagnosis of disease must be recorded on the class record card (form 10).

Code number must always be used to indicate the disease found.

All cases of contagious disease are to be dealt with according to former directions.

Marked cases of physical defects must be recorded on the physical record card (form 3), in those cases the marked defects only need be noted,

the child awaiting complete physical examination in regular order.

In this hurried examination of pupils disease of the skin, scalp, and eye, and evidences of major contagious diseases, can be detected. A careful watch should be kept for desquamation.

After the completion of this preliminary inspection, the daily morning inspection shall begin.

All children ordered under treatment, but not excluded, are to be instructed to report to the school nurse at once; thereafter the nurse will have supervision of these cases until terminated.

COMPLETE PHYSICAL EXAMINATIONS

Each morning after the above duties are completed, the principal will instruct the children to report, in turn, to the medical inspector for physical examination.

Examinations are to be made in the following order, unless otherwise ordered:

1. Children entering school for the first time.
2. In the regular course, beginning with children of the lowest grades, and proceeding to the higher grades in regular order.

3. Classes of the same grade are to be examined in regular order in each school of the group.

Each child must be thoroughly examined for the condition of:

1	Eyes	8	Lymph Nodes
2	Ears	9	Lungs
3	Nose	10	Heart
4	Tonsils	11	Nervous System
5	Pharynx	12	Spine and Extremities
6	Teeth	13	Nutrition
7	Palate		

The graduating class must be examined during the term in which they graduate, and the complete physical record (form 3) sent to the Chief Medical Inspector's office.

For the complete physical examination, there will be the school and physical record card (form 3), medical inspector's record (form 4), and the nurse's record copy (form 4).

A complete record of each physical examination must be made on the school and physical record card and filed in the school in a cabinet provided for the purpose, except in the case of the graduating class.

Slight physical defects will be marked x, for the guidance of the medical inspector in a future physical examination.

Severe cases will be marked xx.

It is the duty of the nurse to see that those marked xxx receive early treatment from the family physician, hospital, or dispensary.

Each day copies of the medical inspector's records must be given by the medical inspector to the school nurse.

Each child requiring treatment must be given a parent's notification card (form 5) properly filled out and signed.

When the nurse reports that she is unable to obtain treatment for the child, the inspector must make at least one visit to the home and endeavor to obtain treatment before terminating the case.

A case is terminated when treatment has been given, or when the parents absolutely refuse to have anything done.

When the case is terminated, the medical inspector shall note on the school and physical record card what treatment, if any, has been obtained; the nurse's record copy is then forwarded to the Chief Medical Inspector's office.

The medical inspector's records must be forwarded with the daily report (form 9).

MEETINGS

Medical inspectors must report in person, at such times as may be designated, to the Chief Medical Inspector.

A meeting of the staff should be held once a week.

DUTIES OF DENTAL INSPECTORS

The hours of duty are from 9 A.M. to 12 noon.

Each dental inspector shall visit the schools to examine such urgent cases as are reported by the medical inspectors and nurses.

He shall treat cases of emergency or endeavor to have them attended to by others. Decayed teeth shall be treated according to the special instructions issued.

He shall give lectures to nurses, teachers, parents, and children on the proper care of the teeth, and such other instruction as he may deem necessary.

He shall prepare for publication and distribution such information on the care of the teeth and mouth as required by the Chief Medical Inspector.

He shall forward a daily report (form 19) to the Department of Medical Inspection, containing a record of the work performed.

DUTIES OF NURSES

Each nurse is assigned to a group of schools.

The hours of duty are from 9 A.M. to 4 P.M. and Saturday, 9 A.M. to 12 noon.

Each nurse shall prepare a time schedule for her group of schools, which must be forwarded to the Superintendent of Nurses for approval; a copy must also be given to each principal.

MORNING INSPECTIONS AND TREATMENTS.—Each morning in a room designated for the purpose, the nurse must receive all children referred to her by the medical inspector and give instructions or treatment as follows:

PEDICULOSIS.—Children affected with pediculosis are to be instructed as to methods of home treatment. Each child must be given a copy of the official circular entitled, "Instructions to Parents on the Care of Children's Hair and Scalp" (see form 12). These children are to be instructed to report to the nurse at her request, and at such times are to be examined for evidence of treat-

ment. In instances of persistent neglect the child is to be referred to the medical inspector for exclusion.

EYE AND SKIN DISEASE.—Methods of treatment to be employed.

RINGWORM OF SCALP.—Treatment as in Favus.

RINGWORM OF FACE AND BODY.—Wash with tr. green soap and cover with flexible collodion.

SCABIES.—Wash with tr. green soap and apply sulphur ointment.

FAVUS.—Mild cases: Scrub with tr. green soap and cover with flexible collodion. Severe cases: Scrub with tr. green soap, paint with tr. iodine, and cover with flexible collodion.

IMPETIGO.—Remove crusts with tr. green soap and apply white precipitate ointment (ammon. hydrarg.) 10 per cent.

CONJUNCTIVITIS.—Irrigate with solution of boric acid.

INSTRUCTIONS FOR PHYSICAL DEFECTS.—The nurse must obtain each day from the medical inspector a record of the physical defects of each case examined on that day. When necessary the

nurse may request the parents to confer with her at the school regarding the treatment for the child. The dates of these consultations must be noted on the nurse's record copy (form 4). The nurse will note on the physical record card the nature of the treatment received from the family physician.

EMERGENCY CASES.—In the absence of the medical inspector the nurse will give first aid treatment, referring all such cases as require it to the family physician, and any suspected case of major contagious disease must be referred to the principal for exclusion (form 7), and should be reported immediately by telephone to the Department of Medical Inspection, giving child's name and address. A written report (form 7) must be mailed the same day.

The nurse must be ready to give any information to the principal as to the children under her care. A child must not be sent from school without the consent of the principal.

ROUTINE INSPECTION.—The nurse must make a fortnightly routine inspection of the children in the classrooms. The eyelids, throat, skin, and hair of each pupil are to be examined.

The children are to be instructed to show the hands, pull down the eyelids, and open the mouth. Wooden tongue depressors are furnished by the department, and a separate one must be used for each child where such use is necessary. No tongue depressor is to be used for more than one child under any circumstances.

All cases of suspected minor contagious diseases found are to be noted on the class record cards (form 10) with the date, in appropriate columns.

The class record cards must be kept in an accessible place in each school in charge of the nurse. Code numbers or letters must be used to indicate the disease.

All suspected cases of contagious eye and skin diseases found are to be referred to the medical inspector for diagnosis.

HOME VISITS.—When cases referred by the medical inspector have not been given treatment in a reasonable time, the nurse must visit the parents at home to explain the condition and the necessity for treatment. She must give general directions regarding proper food, ventilation, cleanliness, and general hygiene. Revisits must

be made in each instance until evidence of treatment is shown, or parents refuse treatment.

No case must be terminated on account of inability to obtain treatment until it has been referred to the medical inspector.

If parents are unable to take the child to a dispensary, the nurse may do so, but must previously obtain in writing a request to that effect, signed by the parent or guardian.

When visiting a home where there is contagious disease, the nurse must not enter the home.

Home visits, visits to hospital or dispensary, must be noted on the nurse's record copy. The form must then be submitted to the medical inspector, who will sign it if the evidence is satisfactory.

The school nurses shall send a daily report (form 15) to the Superintendent of Nurses.

MEETINGS.—Nurses must report regularly in person, at such times as may be designated, to the Superintendent of Nurses.

CHAPTER V

ADMINISTRATION OF MEDICAL AND DENTAL INSPECTION OF SCHOOLS—BOARD OF HEALTH OR BOARD OF EDUCATION

THIS is still a much debated question and many capable men and women have crossed swords over it in argument. Let us look at it for a moment. As these Boards are separate and distinct governing bodies and were created for a particular purpose, it is reasonable to look on this matter of administration from the point of view of the primary function of each body and the practical advantages that would accrue to the children.

The function of the Board of Health is to protect the health of the general public. Primarily, and even yet, in sparsely settled districts, this duty of the Board of Health was largely, if not entirely, the control of communicable diseases. In modern times, however, a Board of Health is recreant to its duty, if it does not protect the public from the menace of disease. So the work

of the Board of Health was extended and likewise its responsibility; it became its duty to secure a pure water supply and to prevent contamination of that water supply; to secure a pure and fresh milk supply and to prevent contamination on the dairy farms and in distribution; to see that milk came from healthy cows; to supervise market gardens, and meat markets; to see that no diseased or contaminated meat, or adulterated food, was sold to the people; to supervise garbage disposal, sanitary conveniences and plumbing; to supervise sanitary conditions in bakeries, restaurants, hotel kitchens, meat shops, abattoirs, grocery stores, lodging houses, refuge houses, detention homes, hospitals and sanatoria, to see that ventilation, efficient lighting, and sanitary conditions are maintained in workshops, factories, mills, stores, industrial plants, public buildings, and conveyances. These functions of the Board of Health are the enforcement of sanitary laws. In recent years it has been found easier to enforce these laws by telling the people the advantages to be gained by their observance rather than by fine or other punishment meted out to the offender. In carrying out this kind of a campaign the Board of Health assumed the function of educating the people, an education of the adult.

But the function of the Board of Education or School Board is education—educating the young child and adolescent. Primarily that duty was thought well done when the child received the rudiments of an education.

To hold the School Board responsible for more than the inculcation of the three R's was uprooting all deep-seated prejudices. A broader education than that held by the members of the School Board themselves was denounced as a "fad." So higher education knocked long and loud at the door of the old School Board before it was heard. So did Commercial Education before it was recognized as of prime importance to the business interests of the country. So did Agricultural Education. For many years farming had to survive on the limited experience of the father passed to the son. No wonder farming languished. Technical Education, too, has just been able to secure recognition. Capitalists were quick to see that the old system of apprenticeship was too slow and that the apprenticed workman often lacked the skill so necessary in modern plants.

It is a pathetic sight and a lamentable exhibition of human wisdom, to see Health Education in the early years of the twentieth century, just able to make a feeble knock at the door of the

School Board. Our worthy forefathers declaimed *mens sana incorpore sano* and the wisdom of the words was as tinkling cymbals and sounding brass to their ears. Health Education—the teaching of the Laws of Health, the lessons of how to live and keep healthy, were left to the inexperienced mother, the grandmother with her folklore and traditions, and the quacks and wiseacres with their superficial knowledge of the human body and its needs, which gave them the temerity and assurance of the fool. On physical development and health depends physical strength, mental capacity and often even moral integrity, yet in much that health depends on we leave the child to its own devices. Even this feeble knock of Health Education, of seeking for self-knowledge, at the door of the School Board raised a wail of disapproval from the Boards of Health. The School Board was usurping their functions forsooth! If school health supervision, or so-called medical inspection of schools means nothing more than the detection and exclusion of children with contagious disease, the contention of Boards of Health may at once be granted. But health supervision of schools and school children, should be largely preventive medicine and therefore the work educational. Through the teacher, the nurse,

the dental and medical inspector, the child is taught the laws of health, trained in practical hygiene and right habits of life, so that he leaves school with a sane practical knowledge of how to care for his body, and of the importance to himself as to others of a clean life and of the control of disease. The normal development of a healthy child is the important work of the school. Control of contagious disease and removal of certain physical defects are but incidentals, important in themselves, it is true. But the school's great responsibility is to keep well children well. We must broaden our conception of medical inspection of schools to include all things that affect the child's physical, mental, and moral development. Every problem of child life such as ventilation, light, drink, food, clothing, rest, work, amusement, cleanliness has a marked effect on his health, has a vital relation to his school progress and later to his efficiency and earning capacity.

The solution of the problem is *education*—iteration and reiteration—and Health Education is the most important duty of the School Board. The inculcation of the laws of health, therefore, and their practical application to the children under its care, is the *first* duty of the School Board. It should take measures to produce normal de-



SUPERVISED SCHOOL PLAYGROUND, TORONTO, CANADA

velopment and maintain health, so as to protect the child from disease, deformity, and death. The whole of this duty should be performed by the School Board, so that it needs the nurse, the dentist, and the doctor to assist the teacher. To have these officers controlled by any outside body is illogical and unwise, produces friction, inefficiency, and loss of interest. The clashing of two independent authorities must inevitably cause irritation and lack of harmony. The duties of these officers, the functions pertaining to medical inspection of schools, are an integral part of school work and must not be separated from it. The attitude of these officers toward the teachers, when controlled by an outside authority, is naturally considerably different than where they are employed by the same governing body, and the active, hearty, and intelligent coöperation of the teacher is a most vital part in Health Education. If friction or difficulty does arise there is but one governing body to deal with the matter, and not two authorities to squabble over whose officer is in the wrong. It is natural, too, where these officers are controlled by the Board of Health that the school health work is left undone when other duties demand more of their time, so that the school health

service becomes irregular, unsympathetic, and inefficient.

It is important not only to have the sympathetic coöperation of teacher, nurse, dentist, and doctor, but also equally important to have the sympathy and intelligent coöperation of parents. Therefore, the school nurse and the school doctor should be frequent visitors to the home—to all homes in the school district where there are children or expectant mothers. They are there to give sympathetic advice and direction, to see that the laws of health are understood and practiced. The success of a school nurse and school doctor should be gauged by their ability to gain this coöperation of the parents in their campaign of prevention of disease. Indeed ere long the entrance of disease into a household should be a reflection on the efficiency of the work of the school nurse and school doctor. When disease does enter the household the school officials should retire and those of the Board of Health take charge. The school nurse and doctor have been there to educate and prevent. It is now a question of enforcement of sanitary laws until the disease is stamped out and this belongs to the Board of Health. All connection with the school must end until disease ends. The work of the officials of the Board

of Health is mandatory, an enforcement of law.

The work of the officials of the Board of Education is educative, an acquirement of knowledge. In small communities or rural districts it would appear wise for the School Board to engage the Medical Officer of Health, to guide and direct this work. In that case, of course, he would occupy a dual position, namely Medical Officer of Health and Medical Officer of the School Board and should have stated hours of service for each Board. Unfortunately many medical health officers have an erroneous conception of medical inspection of schools and are unsympathetic in their attitude toward this important part of school work. The Medical Officer of the School Board should have a deep interest in the sports and games, the drills and physical exercises of the school children.

Let me close by pointing out that the personnel of these Boards should have no bearing on the logic of the argument of which governing body should administer medical inspection of schools. The responsibility rests on the people to elect Boards of Education that will give a sane, clean, and progressive administration.

There are those who think that the Medical Health Officer should be director of all those

engaged in health work. He would thus control the coördination of efforts for the conservation of health if he directed the different agencies engaged in the work. This does not necessarily mean that all these agencies should belong to his department. But it would mean that there would be no overlapping or wasted effort.

CHAPTER VI

SUGGESTIONS FOR STATE OR PROVINCIAL REGULATIONS

WHERE the State or Provincial Board of Education has adopted a system of medical and dental inspection of schools, regulations are necessary to govern the medical, dental, and nursing services in the schools. Such regulations will vary to suit different places. They must provide for the employment of doctors, dentists, and nurses, or doctors only, or nurses only, and define their relation to the principal of the school in the carrying out of the work. The following are submitted as suggestive clauses dealing with the school work and its direction.

ORGANIZATION COMMITTEES

A School Board or a number of School Boards acting either by themselves or in conjunction with other local organizations, may by resolution adopt a system of school medical inspection.

Where a number of School Boards acting either by themselves, or in conjunction with other local organizations so decide, the inspection shall be under the charge of a Committee to be known as a School Medical Inspection Committee and to consist of as many members of each School Board and the other local organizations concerned as they may mutually determine.

QUALIFICATIONS OF PHYSICIANS AND NURSES

The School Board or the Committee shall appoint for the purpose of medical inspection one or more legally qualified medical practitioners of, when practicable, not less than two year's experience in the practice of their profession and called School Medical Inspector or Inspectors.

When the School Board or the Committee appoints more than one School Medical Inspector, one of the former may be designated by it as Chief Medical Inspector, and, subject to the regulations, may be given such oversight of the duties of the others as the School Board or the Committee may determine.

In addition to the School Medical Inspector or Inspectors, the School Board or the Committee may appoint one or more nurses who shall be

graduates of reputable training schools for nurses and shall be known as School Nurses.

The School Board or the Committee may also appoint a School Dental Surgeon or Surgeons who shall be qualified Dental Surgeons of, when practicable, not less than two years' experience in the practice of their profession, who shall be subject to the general oversight of the School Medical Inspector as limited by the following regulations:

The dismissal of said School Medical Inspector or Chief School Medical Inspector appointed by said School Board or Committee shall be subject to the approval of the Provincial or State Board of Education.

In small or rural school districts where the services of the School Medical Inspector cannot readily be obtained or where the duties do not call for his half-time or his whole-time services, the School Board or Committee may appoint one or more nurses who shall be graduates of reputable training schools for nurses and shall be known as School Nurse Supervisors. Where more than one is appointed one may be designated Supervisor of School Nurses and subject to the Regulations may be given such oversight of the duties of the

others as the School Board or Committee may determine.

EXPENSES

Where medical inspection is provided by the School Board, the cost thereof shall be included in that of the maintenance of the school and shall be provided for in the same manner.

When medical inspection is provided by a Committee, the cost of maintenance to be borne by each of the Boards and other local organizations represented thereon, shall be settled by agreement amongst the said Boards and organizations and in the case of the School Boards it shall be included in the cost of the maintenance of the school and be provided for in the same manner.

MEDICAL INSPECTION

The School Board or the Committee shall determine how often the members of the staffs appointed shall visit the schools; but the number of such visits shall not fall below the following minimum:

- (a) Rural School Districts—once a month.
- (b) Villages—once a fortnight.
- (c) Towns—once a week.
- (d) Cities—every day.

The hours of work of the members of the said staffs shall be determined by the Board or the Committee as the case may be, but shall be during the regular school hours, except, when home visiting may make regular hours impossible; the School Board or Committee may arrange for additional home visiting on Saturdays.

Subject to the approval of the Principal, the inspection shall be made in the classroom and, for special examination, in a suitable room or other part of the building where no other pupils are present.

Subject to the Regulations, the School Board or the Committee may pass by-laws defining the duties of said staffs and making provision for the carrying on of the work of medical inspection.

DUTIES OF SCHOOL MEDICAL INSPECTORS

In such of his duties as affect the general management of the schools, the School Medical Inspector or Chief School Medical Inspector as the case may be, shall be subject to the authority of the School Superintendent, or the Principal of the school when, owing to other duties, the Superintendent is not accessible.

The School Medical Inspector shall make a complete physical examination of every pupil as soon as practicable after his admission to the school.

A complete physical examination shall consist of an examination of the head, eyes, ears, nose, throat, teeth, and cervical glands, of the heart, lungs, spine, and joints, and of the skin of the face, neck, and hands. The examination of the eyes and ears shall include testing for sight and hearing. The heart and lungs shall be examined over the clothing except in special cases and then only by permission or in the presence of the parent or guardian. The presence or absence of vaccination scars shall also be recorded.

Special examination shall be made of any new cases which may be referred to the School Medical Inspector by the Principal, or the School Nurse, and of any other cases which a previous examination has shown to need attention, or which may otherwise come to the notice of the School Medical Inspector.

The School Medical Inspector shall make a classroom examination of every pupil at least once every half-year as to the condition of the mouth,

throat, teeth, eyes, and ears, and the skin of the face, neck, and hands.

On completing these examinations, the School Medical Inspector shall, when he deems it necessary, notify the parent or guardian, on a form to be sent through the Principal, of the physical condition of his child or ward, and it shall be the duty of such parent or guardian to have the case duly attended to.

A record of all the physical examinations of the pupils shall be made by the School Medical Inspector on the forms provided, and shall be kept by the Principal in the school building.

In event of the School Medical Inspector reporting to the Board or the Committee that the physical condition of a teacher or a janitor of a school is such as to endanger the health of the pupils at the school, the Board or the Committee may order a physical examination of such teacher or janitor, and may exclude him from the school until he presents a certificate in writing from the School Medical Inspector, that his physical condition would no longer be dangerous to the pupils.

Subject to the instructions of the School Medical Inspector or the Principal, a School Nurse shall

visit the pupils' homes and shall confer with their parents or guardians at such hours and places as many be arranged by her through the Principal.

The Nurse shall keep a written record of such visits and conferences and shall report promptly and fully in regard to them to the Principal and the School Medical Inspector within one week after each visit or conference.

In cases of emergency, a School Medical Inspector, or School Nurse may render first aid, and may bandage wounds and apply antiseptic dressing to cuts, wounds, and bruises, but shall not give nor prescribe medicines or other treatment.

The School Medical Inspector, from time to time, shall confer on the sanitary conditions of the school accommodations with the School Superintendent or Principal.

He shall also give the School Superintendent such assistance as he may require in organizing special classes and preparing courses for sub-normal pupils.

The School Medical Inspectors or the Chief School Medical Inspector, as the case may be,

shall, in a written report to the Board or the Committee at least once a month, bring under its notice any matters pertaining to his duties that require its attention.

At the close of each school year or at such other times as he may be called upon, the School Medical Inspector shall make a report to the School Board or the Committee on the general health of the school children, and any conditions of home environment that come under his notice that injuriously affect the health of the pupils. In such report, he shall make recommendations when, in his judgment, action should be taken by the Board or Committee.

DUTIES OF SCHOOL NURSES AND SUPERVISORS

Where Nurses only have been appointed, subject to instructions from the School Superintendent, or to the Principal of the school, the following shall be the duties of the School Nurse or Nurses appointed in lieu of a School Medical Inspector:

The School Nurse or Nurses shall make an examination of each child as soon as practicable after admission to the school, and shall report in

writing, on the forms provided, to the Principal who shall keep the records in the school building.

The examination shall consist of an inspection of the scalp, skin of the face and hands, the mouth, throat, and teeth; the joints and spine; and simple tests for sight and hearing. The pulse and temperature shall be observed if necessary, and the presence or absence of vaccination scars be recorded.

Special examination shall be made of any new cases which may be referred to the School Nurse by the Inspector or Principal, and any other cases which a previous examination has shown to need attention, or which may otherwise come to her notice.

On completing these examinations, the School Nurse shall, when she deems it necessary, notify the parent or guardian, through the Principal, of the physical condition of his child or ward, and it shall be the duty of such parent or guardian to have the case duly attended to.

In case of emergency, the School Nurse may render first aid, may bandage wounds, and apply antiseptic dressings to cuts, burns, and bruises, but shall not give nor prescribe medicines or other treatment.

The School Nurses shall visit the pupils' homes and shall confer with their parents or guardians at such hours and places as may be arranged by her and approved by the Principal.

The School Nurse shall keep a written record of such visits and conferences and shall report promptly and fully in regard to them to the Principal and the Inspector within one week after each visit or conference.

The School Nurses shall assist the School Inspector in preparing reports of the health of the children required by the School Board or Committee.

DENTAL INSPECTION

Subject to the approval of the Principal, the inspection shall be made in the classroom or, for special examination, in a suitable room or other part of the building where no other pupils are present.

The Board or the Committee may install in a room suitable for the purpose in one or more of its school buildings a dental chair for the examination and treatment of the pupils' teeth.

Once every half-year and at such other times as the School Board or the Committee may direct,

the School Dental Inspector shall make an examination of the teeth of all the pupils attending the school or schools.

The first half-year's visit shall be made at as early a date as is practicable.

When a School Dental Inspector reports that the teeth of a pupil require dental attention, notice of the facts shall be sent to the parent or guardian through the Principal, and it shall be the duty of such parent or guardian to have the case duly attended to.

At the close of the second school half-year the School Dental Inspector shall make a written report on the general condition of the teeth of the pupils to the School Board or the Committee. In such report he shall make recommendations when in his judgment action should be taken by the Board or Committee.

DUTIES OF PRINCIPAL

It shall be the duty of the Principal of a School visited by a School Medical Inspector or a School Nurse or School Dental Inspector to require every pupil to submit to such examination as such officer is empowered to make under the regulations.

The Principal shall exclude from school any pupil who has been reported to him by the School Medical Inspector or School Nurse as having symptoms of smallpox, scarlet fever, diphtheria, measles, chickenpox, mumps, whooping cough, or other communicable disease.

When the School Medical Inspector or School Nurse are not present, the Principal shall act on his own judgment and shall immediately notify of such action the Medical Officer of Health, and the School Medical Inspector when there is one in charge.

The pupils so excluded shall not return to school until he presents to the Principal a certificate in writing signed by the Medical Officer of Health or other qualified medical practitioner approved by the former that all danger from exposure to contact with such pupil has passed.

When a pupil is discovered with pediculosis or with such skin diseases as itch or ringworm, the Principal, on the report of the School Medical Inspector or the School Nurse that the child cannot attend school without danger to the other pupils, shall immediately send the pupil home.

The pupil so excluded shall not be readmitted until, in the judgment of the School Nurse, subject to confirmation by the School Medical Inspector, he may be readmitted without danger to the other pupils.

The Principal shall confer with the School Medical Inspector or School Nurse in regard to the physical exercises that are to be taken by the pupils and, on the report of the School Medical Inspector or School Nurse after conference with the family physician, the Principal shall modify or prohibit for any pupils, whose physical conditions require it, the school physical exercises or games.

Subject to instructions from the School Board or the Committee, as the case may be, the Principal shall arrange for conferences between the teachers and the school doctors, dentists, and nurses, to discuss school hygiene and special cases of pupils who require medical, surgical, or dental attention.

CHAPTER VII

LITTLE MOTHERS' CLASSES AND SCHOOL BABY CLINICS

IT is a common sight everywhere to see a young girl nine or ten years old in charge of a babe in arms, or a toddler two or three years of age. These young girls are the nurses in charge while the mothers are out working or busy with household duties. Too frequently the babes are dirty, have colds, discharging noses, cuts, bruises, and sores on hands, arms, and bodies; their clothes also are dirty, torn, and without buttons, so that dresses are partly open or but insecurely retained by pins, strings, or nails; the clothes are frequently improperly adjusted to the child's body, and mitts and stockings are full of holes. To complete the picture the babe is practically always chewing a biscuit, cake, apple, pickle, banana, "all-day sucker," gum, or "comfort." Frequently both babe and "nurse" are in tears, but more frequently this distressing sight has a wonderfully appealing

side, the bright, dancing eyes of both baby and its attendant sister despite the uncomfortable and sordid conditions of themselves and their surroundings. Many kind hearts have smiled at the upturned faces of these wee kiddies while they sorrowed over the lack of care and training and wondered what must finally be the outcome of it all. Could we expect anything from these children but untidiness, uncleanness, shiftlessness, undisciplined minds, loose habits, ill-health, dishonesty, crime, and immorality! After many efforts in many directions to help the overburdened or careless mothers to look after these neglected children, a solution of the problem was found by the school nurse in the formation of the Little Mothers' classes in the schools. These classes were organized for the purpose of teaching little girls who had younger sisters or brothers how to take care of their charges—hence the name. For long hours at a time these "little mothers," mostly under twelve years, were seen carrying heavy babies about the streets, sitting on door-steps, or playing in the parks, all of them dirty and perhaps scantily clad. They were of necessity away from school a great deal, being kept at home to "mind the baby." Too often even the truant officer failed to obtain a regular attendance at school.



LITTLE MOTHERS—BED MAKING. TORONTO, CANADA

It can readily be seen that infant mortality could be greatly decreased if these little mothers were taught how to conserve the lives of the babies by proper care, instead of letting them die because of ignorance of the simple rules of hygiene and health. Improper feeding is one of the greatest causes of disease among children during the summer. If these young girls who are naturally fond of their baby brothers and sisters were taught the importance of the babies' diet, this frequent cause of summer disease could be removed and they could be one of the greatest factors in the reduction of the high infant death rate. The only qualification necessary to become a member of one of these classes, clubs, or leagues is that each girl must be able to bring a baby to the lesson when required. In this way the "little mother" is given an opportunity to demonstrate the lesson taught on her own charge whether that lesson was washing, drying, dressing, or feeding the baby or cleaning baby's feeding bottle. Of course, other lessons are taught such as how to make the bed, sew on buttons, hooks and eyes, wash and mend clothes, darn stockings and mitts, clean dishes, etc. The ages of those attending the class usually ranged from twelve to sixteen years. After the organization of these classes girls who had no

babies in the family wanted to join. They were permitted to do so if they could borrow a baby. Later, on account of the great interest manifested, all girls over ten years were admitted to the privileges of the classes.

One little girl was so anxious to join that she went to a family where the youngest children were twins; the mother would not let one go without the other. The next oldest child, a little boy of nearly three, would not be left alone, so the little mother came to the class very triumphantly bringing all three with her. It was necessary for the school nurse to go to the home and explain that one little mother could not look after so many at one time.

The equipment required for demonstrating the lessons should be provided by the School Board. If this body is too parsimonious or too blind to see the splendid benefits from such work, it is usually not difficult for the school nurse to arouse sufficient interest among the teachers and other friends to prepare a school concert to raise funds for the purpose. Principals are not only willing to allow their pupils to give such concerts but also lend enthusiastic assistance. The parents' first interest is obtained because their children or their neighbor's children are taking part in the con-

cert and the school becomes the center of a very pleasant social event. In this way, too, everyone's interest is aroused in the forthcoming organization of a Little Mothers' Class and everybody's tongue is wagging. A preliminary talk is given to explain the object of the organization, to stimulate interest, and find out those who wish to join; they should be advised to gain the consent of parents; this will also arouse the parents' interest.

The following equipment will be required:

1 cot bed—white enamel preferred

1 mattress.

2 sheets, 1 draw sheet, and 1 rubber draw sheet.

1 pillow, 1 pillow slip, size of pillow.

1 spread.

1 baby basket.

1 pair scales.

1 bath-tub—1 bath thermometer.

2 feeding bottles, 1 saucepan for sterilizing milk.

1 thermometer for testing heat of milk.

1 gas stove.

1 celluloid doll (life size).

Sewing and darning needles, thread, yarn, buttons, hooks and eyes, pins, safety pins, material for mending, etc.

A kindergarten room is the best adapted place for the holding of these classes. There is more

space for the girls to move about, and the kindergarten chairs and tables can be utilized in the work. The best hour for holding these classes is from 3 or 3:30 to 4:30 P.M. and should be held weekly.

The girls are encouraged to report how they have been able to help by doing some personal service for a baby other than their own. Such acts of kindness as warning a mother about the danger of a comfort; taking a child into the park for air and sunlight; making a netting to protect the baby's eyes; instructing a mother how to keep the milk clean and cool, are some of the suggestions that may be made when organizing the class. No routine work is planned for the girls. It is a great delight for them to report something of their own initiative.

At the first meeting it is well to let the girls elect their president, secretary, and a committee of ways and means. These should be chosen from the older girls. The girls not only get their first lesson in the orderly conduct and direction of a meeting but added zest and interest is aroused. Classes should not be larger than a dozen or fifteen. If larger they should be divided into groups of six with one of the brightest girls in charge of each group.

The school nurse should have a series of lessons

prepared covering the essential things on the care and training of the baby. These lessons should be simple, direct, and short. The series should include at least such as:

1. Bathing the baby—temperature of bath—kind of soap to use—how to hold the baby when bathing—towels—drying thoroughly—powder.
2. Care of eyes, ears, nose, throat.
3. The hot bath, bran bath, sulphur bath, etc.
4. Dressing the baby—clothes—how often changed—how made—how put on—properly adjusted.
5. The diaper, bowel and urinary evacuations—cleansing.
6. Feeding the baby—nursing—bottles—kind, cleaning, care—modification of milk—storing.
7. Weaning—milk and its care—barley water, other foods, fruit, no tea or coffee.
8. The bed—how to make—position of babe in bed—size of pillow.
9. Ventilation—fresh air day and night—temperature—moisture, movement.
10. Play—harm of excitement, especially before rest time.
11. Sleep and quiet—frequency—time—regularity and importance.
12. Flies—mosquitoes—fleas—lice—bedbugs.

13. Prevention of disease.
14. Development — brain — body — health — activity — success.
15. Sewing — mending — darning.
16. Teething — care of the teeth.
17. General cleanliness — hair — clothes, etc.
18. Character talks — decency — sex education.

At the first lesson the nurse explains the object of the classes, what she expects the girls to do at each lesson and what the information obtained will eventually mean to the girls, the babies, and the general health and comfort of the community in which they live. She points out to them that this is an opportunity to be of service to their country, as well as to their parents and to themselves, by helping to save the babies who will in a few short years be the men and women of the community.

These early lessons will prepare them for citizenship, make them lovers of law and order, health and cleanliness, honesty and morality, and thus insure a happy contented neighborhood.

The nurse should always see that a baby is provided for the first lesson to intensify the interest — a fat, plump, good-natured babe. Every girl loves to see a baby getting its bath. The nurse should demonstrate how to hold the baby while

bathing, the necessary attention to mouth, nose, eyes, ears, head, and feet, as well as the body, how to dry carefully and well, dress, put to bed, etc. At subsequent lessons the girls are allowed to do the whole work themselves for their own babies under the supervision of the nurse. After the classes are well organized several groups can be practicing the lesson taught at the same time.

The lesson should be repeated until each girl can wash and dress the baby satisfactorily. Similarly with the other lessons. The celluloid doll should be used in repeating the lesson of how to dress the baby, for of course a baby should not be repeatedly undressed. The celluloid doll can also be used in repeating the lesson of bathing, but the nurse should be careful not to allow the girls to handle the doll differently from the baby. If they were allowed to twist the limbs of the doll about in a way that would be painful or hurtful to the babe, much of the usefulness of the lesson is lost. The same exactness should be demanded in washing the baby's bottle, nipple, and their after care, the sterilizing of milk, the frequency of feedings, the quality of food, the prompt changing and attention to diapers, the regularity of sleep, and especially the importance of babes and kiddies up to eight years old being in bed by

seven o'clock and children up to twelve being in bed by eight o'clock.

Material for making babies' clothes should be obtained, and the girls taught how to cut and make a whole baby outfit. Girls should be encouraged to bring material to make clothes for their baby sisters or baby brothers. They should be taught how to select material for this purpose, or how to use material at their disposal. They should also be encouraged to bring their own clothes needing mending or stockings or mitts needing darning, coats needing buttons or dresses needing hooks and eyes. The girls should learn not only to keep themselves trim and neat but also to take pride in seeing the younger ones in the family clean and properly clothed.

Another important thing for these girls to learn is the ability or adaptability of making the best possible use of everything they may have in their own home, or of devising ways of accomplishing what they need without buying costly conveniences. Instead of buying a bath thermometer, for instance, the girls are taught that water for baby's bath should not be warmer than what can be borne easily by the bare elbow.

These girls love to pass on this information to their neighbors and many a "little mother" leads



LITTLE MOTHERS—BABY'S BATH. TORONTO, CANADA

a mother in Israel into the paths of tidiness and cleanliness. The girls, too, are taught how to look for defects in their own and their neighbors' children and to coöperate with the school nurse in obtaining for these wee tots the attention they need at hospital or clinic. They become helpful in the community and are encouraged to tell of these things at the class meetings. One little girl related in a quiet, unassuming way how she had gone to the second story of the house where she lived to see why a baby was crying so much. She found the mother weeping over her baby because it refused to take nourishment. She urged, and finally persuaded the mother to take the baby to the "Spensary" and went along with her to show the way. The dispensary doctor told the school nurse afterwards that the child was seriously ill and would soon have died from lack of attention. Proper treatment and proper diet saved the baby's life. This is one of many instances of the incalculable services rendered by these little mothers. The girls at present receiving this valuable instruction will soon be the real mothers and it is our obligation to see to it, that they can assume this responsibility with an intelligent knowledge of the duties of motherhood.

The school authorities are slowly awakening to

the fact that such practical subjects should be a part of the school curriculum. Occasionally it is well to have a special talk from a physician, social worker, or civic administrator who interests himself or herself in this kind of work. All these things will develop personal and civic pride which will improve the personal and public health and elevate the social standards of life. The training in these little mothers' classes fits the girls for better work in school, better motherhood, and better citizenship.

SCHOOL BABY CLINICS

We know that parents from want of knowledge frequently neglect ailments in the baby that seem trifling to them, only to realize, when too late, that the trifling ailment means blindness, deafness, lameness, a life-long disfigurement, an enfeebled constitution, or even death to their child. Mental anxiety and many serious conditions might be avoided by a timely warning. Frequently advice is not sought in such cases because of the cost, the long distance to hospital or dispensary, or because some "granny" has given her dictum that "the child will grow out of it." Through the agency of the school nursing and medical service these lamentable things should be avoided.

Mothers should be encouraged to come to the school nurse for advice. The mother may not know the first rudiments of how to feed and care for a babe, or she may need warning to seek the advice of the family physician, because of her child's condition. Once the mother understands her child is seriously in need of the attention of a physician, surgeon, oculist, aurist, or dentist, there is usually no great difficulty in obtaining that attention.

A certain day or days of the week should be selected and a specified time set for mothers' consultations with the nurse. These school clinics should be continued during July and August, because of the frequency of illness during the hot months. The great purpose of such a clinic should be to get mothers to seek advice before the children get ill, to seek for the assistance of the trained knowledge of the nurse, which is so important to the child's welfare. Much needless suffering could be avoided and many infant lives saved if this timely warning could be given. Young mothers pick up their knowledge of a baby in any way they can, and the instruction these mothers receive from neighboring old ladies is nearly always inadequate and too frequently inaccurate. A large part of infant mortality and the ill-health

of early childhood is due to the ignorance and incapacity of the mothers, and this ignorance and incapacity must be laid at the door of the State. Education, wisely interpreted, concerns the body as well as the minds of the pupils, and the first essential duty of the School Board is to see that the child is intelligently cared for during the intervening years, from birth to school life. By teaching a mother how to intelligently manage and care for her child, many of the maladies that assail infant life can be avoided. Nearly, or perhaps all of these maladies arise from improper feeding, cleansing, and clothing, lack of proper exercise and insufficient sleep. Reduction of infant mortality is not the only result of such instruction. Many infants, by hook or by crook, not because they have been properly cared for, manage to live; but, although they survive, they are likely to emerge from the unhappy circumstances of their infant life with constitutions undermined and enfeebled, their vitality lowered, their resistance lessened, perhaps crippled and handicapped, and continue their miserable existence, a care and a burden to their parents, or more frequently to the State, in dispensary, hospital, home, or asylum, to finally die of anæmia, malnutrition, pulmonary tuberculosis, or other wasting



LITTLE MOTHERS—PUTTING BABY TO BED. TORONTO, CANADA

disease. Intelligent care, secured at a minimum cost, would have saved a useful life to the State, instead of which there resulted ill-health, misery, suffering, and death, at a maximum cost.

There is always a high infant death rate during July and August. Intelligent instructions to the mothers would guard children from indigestion, summer diarrhœa, malnutrition, ricketts, marasmus, and the infectious diseases of childhood. These far too common ailments, which send the child to his grave or prepare him for pulmonary tuberculosis, with a short life of misery and suffering, could be eliminated by the School Baby Clinic.

CHAPTER VIII

THE FOREST SCHOOL

THE first Open Air School was established at Charlottenberg, Germany, in 1904, and was really intended for tuberculous children. The results of this initial effort were so satisfactory that other countries soon followed the example of Germany. Liverpool is given the credit of having begun the movement for Open Air Schools in the British Empire. Miss Eastwick started a school for children with tuberculous disease of spine and joints.

The difficulty or uselessness of trying to cram a child's head full of knowledge that had an enfeebled, poorly nourished, or sick body has been slowly recognized. For many years the child's body has been neglected, and its mind coddled and spoonfed. Educationists failed to realize the tremendous importance of the physical condition upon mental development; many teachers still fail to realize it. In the higher grades we

find fewer children with physical defects. The mental tasks have been a thorough physical endurance test. Those with physical defects and under-nourished bodies were hampered or stopped in their school progress: they never reached the higher grade. But parents, educationists, and governments hand out the same tasks to the nervous, half-blind, semi-deaf, anæmic, ill-nourished, diseased, rachitic, ptomaine-poisoned child as to a normal child. What a burlesque on common sense and what refined cruelty! The embittered, wasted, criminal lives of many children cry out against this haphazard irresponsible method of dealing with child life. A true knowledge of child care should be more general. Personal and general hygiene and health education should have a far more prominent place in the school curriculum. A sane knowledge of his own body and its care will mean more to a child than a smattering of art and music. Many a child is backward, physically or mentally defective, vicious, criminal, because of uncleanness, improper feeding, disease, and neglect. It is the highest and truest economy for the State to see that every child gets his fair chance for health.

In Open Air Schools health is given first consideration. Here we gather the poor little waifs

whose home and school conditions robbed them of their patrimony—health; the anæmic, under-nourished, poorly developed, pre-tuberculous, backward, uncared-for children—the children who will otherwise be physical weaklings, who will fill the class of the shiftless, fill the reformatories, the hospitals, the sanatoria, the shelters, and the prisons, penitentiaries, and asylums, who make the loafers and criminals of adult life, who never had the asset of a healthy, vigorous, clean body, or knew the inspiration of a clean mind.

These children are first taught how to live. It must not be forgotten that the education of the young child is primarily physical, and not primarily intellectual. To some extent modern life makes home training and supervision incomplete or faulty. The school, therefore, in some measure, must take the place of the home, and the teachers undertake some of the duties of parents. But this should be a partnership between the State and the family and bring the school into closer relation with the home. It is poor economy on the part of the State to allow children who are underfed, physically defective, or diseased to attend school. The child receives little or no benefit from a costly education; he is not being

fitted for useful citizenship. Instead of becoming an asset to the nation he becomes a danger or a total loss, for after a lingering, painful effort to overcome his handicap he either enters criminal life or dies in his youth. To cure obvious disease, to remove obvious physical defect is but the obvious evidence of ordinary humanity; our vision and our wisdom should enable us to see further into the future; let us train children how to live in a healthful way and teach them the laws of health. Personal and general hygiene are of specially vital importance in modern life.

At Open Air Schools children usually spend ten hours out of the twenty-four in the open. What effect has this open air life—simply breathing the open air—upon health, physical and mental development? It is easy to see general effects and to make general statements, but almost impossible to obtain comparative statistics, for we must not forget the other things at the Forest School that have their effect on the general health. Here we might consider the relative importance of the purity, humidity, temperature, and movement of the air—the respiration of the lungs, and the respiration of the body—the whole question of school ventilation. How much does heating air impair its value to the human body?

How much does the high temperature demanded by the body in a dry atmosphere produce superficial breathing and impair expansion of air cells? How much does the high temperature and lack of air movement in the ordinary classroom prevent change in the aerial envelope and impair body respiration? The condition of the aerial envelope, or body air, depends on temperature, humidity, the tonicity, and movement of air. Heated air loses its vitality or tonicity. Elaborate experiments have shown that the condition of this aerial envelope is a very important part of the hygiene of the body, and has a very marked effect on the health. When this air is very dry it absorbs moisture from the body at a high rate, the body is cooled by evaporation, and we feel cold. When the air is moist and warm it does not absorb moisture, and we feel too hot. When the air is moist and cold it absorbs heat from the body rapidly, and again we feel cold. So it would appear nature intended human beings to live out of doors, for it seems impossible to approximate the conditions of outside air in buildings ventilated by mechanical systems. At Lincoln Park Zoo, Chicago, some newly acquired monkeys were kept in well-ventilated, evenly heated rooms approximating their native climatic conditions.



FOREST SCHOOL. TORONTO, CANADA

One by one the monkeys sickened and died. The gamekeeper grew tired of his continual losses, so he bundled some of those nearest death outside, giving them no artificial heat, and only a shelter from storm. The dying monkeys revived, gained strength, and soon grew fat.

Cold quickens and deepens the respiration and produces a corresponding increased rate of metabolism. This calls for increased physical exercise, and physical drill; calisthenic and other exercises are frequently given at the Open Air School. In fact the school periods are only about one half the time at the regular day school. The rest of the time is given to sleep, play, gymnastic exercises, nature study, and drill. We must consider, too, the therapeutic effect of direct sunlight. It is said that the refracted rays of the sun are equivalent in their effect to mild x-rays.

FOOD.—The Science of Nutrition has a close and practical relation to the Science of Eugenics, and both to Education, for it boots little to have a child well born if it is not well fed, trained, and disciplined. Meals should usually be partaken in the open, even in places where the school is continued through the winter. How much does this help digestion by keeping the body surface cool and increasing the blood supply to the diges-

tive organs? Usually children are given three meals a day at the Forest School. They are asked to take a cup of milk only before leaving home, and on arrival at the school are given a breakfast of cereal, sugar, milk, bread and butter. Dinner at noon consists of soup, potatoes, and meat, occasionally eggs, vegetables, bread and butter, milk and pudding. At 3 o'clock, after the rest period they are given a cup of milk, and at 5:30 supper consists of milk, bread and butter, light cake, or fruit, apples, bananas, prunes, and occasionally strawberries. There is little variation in the diet, except what is afforded by the different kinds of vegetables. The question of food values is somewhat modified by the question of cost. In children there is a natural tendency to an excess of carbohydrate food, which is, of course, the cheaper food, but an effort is made to keep the diet fairly balanced. Butter comes high and so does milk, but usually it is possible to get a good quality of pasteurized milk at a very special price for such a purpose. Beef, mutton, and occasionally fish furnishes the albuminate portion. It is usual to have some difficulty, at first, over this plain diet. These children have been accustomed to all kinds of truck instead of wholesome food, so after stimulating their appetites

we have to educate their tastes. In considering the effect of this diet on the child we must also consider the effect of proper cooking; the effect of regular hours for work, rest, play, sleep, and meals; the effect of improved digestion and assimilation, and the increased tissue metabolism stimulated by outdoor life and physical exercise; and the effect of regular attention to the excretions. The catering and cooking and personal hygiene of the children are under the supervision of the school nurse.

SLEEP.—At first all these children look upon the two hours' sleep after dinner as a great hardship. Few of them know anything about home discipline, except the kind that is shown by outbursts of anger and flogging. Their health has been broken not only by unwholesome food and poor cooking but also by the excitement and late hours of the street. The reclining chairs so commonly in use in Europe for the rest period are not well adapted to give complete muscular relaxation, and therefore do not give complete rest. Cots five feet long and three feet wide with heavy strong woven-wire springs and drop ends can be obtained cheaply. These ends swing under, lying close to the wire spring when it is desirable to set the cots aside. A double military blanket and small

pillow complete this equipment. These are numbered and each child puts away his own blanket and pillow in a locker under the supervision of the teacher and nurse. Careful supervision must be exercised over the children when they get into their cots, otherwise many are found in awkward and most uncomfortable positions, making impossible sound and refreshing sleep. Boots and hats only are removed and the child gets into the blanket, folded so that he has to lie on the right side. To get the children to sleep readily strict discipline and absolute quiet must be maintained. There may be difference of opinion whether one to three is the best time for the rest period.

CLOTHING.—From March or April to October the children can be in their classes in the open without hat or extra wrap. In the ordinary school room where the temperature is never allowed to drop below seventy degrees, where every movement of air is carefully prevented, the child's system is not called upon to produce body heat for itself; heat is over-supplied artificially, and hence tissue metabolism is sluggish, assimilation and excretion are impaired, and the child's physical and mental activities clogged. It is far too common to find children in the regular classroom sitting beside hot radiators with extra wraps on,



REST PERIOD—FOREST SCHOOL. TORONTO, CANADA

big sweater coats, sometimes two or three of them, and neck scarfs. Teachers will ask children to take off rubbers, but they do not think it is within their province to ask children to take off extra wraps in a hot room.

Where Open Air Schools are continued through the winter, the only extra clothing is the "Eskimo" suit, a combined toque and coat of flannel, and big felt boots over the ordinary ones. These are worn only in the severest weather.

PERSONAL CLEANLINESS.—In the Forest School every child must have a toothbrush, and it is far better that a uniform type be insisted on—the Hutax. One should be supplied if necessary. A simple method of keeping them is as follows: small staples large enough to hold a toothbrush are driven into a large smooth board at regular intervals and in several rows. Each staple is numbered and the number given to a child. This holder is placed on a wall within easy reach of every child. After each meal the children take their mugs, line up according to number, and, under the supervision of one of the larger pupils acting as monitor, come forward in order for their toothbrushes. They form into several ranks, arm's length apart, and boys pass along the ranks with pitchers of water, filling each child's mug.

Then the nurse puts them through a thorough and systematic toothbrush drill.

A tub bath is given once a week at least. Insist also on the necessary attention to mouth and throat, eyes and ears; all decayed teeth should be filled, adenoids removed, and nose-breathing taught.

RESULTS.—The gain in weight is but one evidence of an all-round improvement in digestion, assimilation, and excretion; of wholesome food and good cooking; of a regulated life of work, rest, sleep, play, and meals; of personal cleanliness, oral hygiene, and all that goes to make up the outdoor school life. We have changed the child with the dull, lusterless eyes, pale, pinched face, skinny arms, round shoulders, contracted chest, distended abdomen, and puny body into one that is alert, erect, active, bright-eyed, and vigorous. These children may have to learn that although school is in the woods, although the school routine is so different from the regular graded school, it is still necessary to maintain discipline. The quickened mentality is not the only result, for the child learns something in deportment, to lift his hat to a lady, to smile back "Thank you" for a service rendered, to eat and drink decently at the table, to appreciate the beauty of a few

wild flowers, the lure of the open woods, and to recognize his Creator in the things of nature. There is an uplift to his whole moral being, the effect of which will never entirely pass away. The natural comradeship between teachers and pupils in the Open Air School helps a great deal to mold habits and morals and to develop character in children whose life has been mostly of a very sordid kind. The highest aim is to give these children a new ambition; a desire to make good in life; a desire to be useful, efficient, independent. We aim to produce order out of chaos, a disciplined mind as well as a healthy body, moral habits as well as cleanliness, a courteous manner as well as a vigorous independence; to develop a little human kindness and higher ideals; to give them the light of a new dawn, a new hope.

CHAPTER IX

DISEASES

A BRIEF reference is here given to the diseases commonly found among school children. This is done simply to be some guide to the school nurse what diseases she should be guarding against. She should be familiar with the early symptoms of these diseases, for frequently she is, or ought to be, the first to detect that the child is unwell. She should be familiar, too, with the symptoms that indicate the presence of certain physical defects, or indicate developing defects. For instance, she should be the first to detect the beginning of spinal curvature, the poor development of jaws, facial deformity, and malocclusion of teeth, a deflected nasal septum, or the presence of nasal polypi or adenoids. Very frequently a child is making poor progress in school because his vision is bad, but no one has discovered the fact. The child does not know why he cannot see well and therefore cannot tell. This should be constantly



CLASS PERIOD—FOREST SCHOOL. TORONTO, CANADA

borne in mind by the nurse, and careful observation made of all children.

In these modern days it is a deep reflection on both teacher and nurse if failing vision has been developing in a child for some time before the fact has been discovered. The general appearance and condition of the child not in good health should warn her of the probable presence of glandular, bone, or pulmonary tuberculosis, rickets, hereditary syphilis, otitis media, anæmia, cardiac disease, or malnutrition. It is preferable that she should send children unnecessarily to the family physician or school medical inspector for examination than that one child should fail to receive that necessary attention that will save him from permanent defect and a physical handicap for life. She should, too, be familiar with the early symptoms of the onset of communicable disease, for frequently little attention is paid to the initial symptoms. Where an epidemic of communicable disease breaks out in a school the nurse should feel that she has failed somehow in her oversight of the school children in school or at home.

The observant nurse should be quick to detect things that escape the observation of the teacher or mother. When communicable disease is found,

active and vigorous measures should be taken in conjunction with the Board of Health to see that efficient quarantine is maintained. If the disease is of a mild type, people frequently resent strict quarantine. The school nurse can be of great assistance by talking to the mother of the danger of communication from contact with others—adults who carry the disease to the children in their own home—and in these cases the disease may be severe and cause death. Frequently this truth can be illustrated from the personal experience of the nurse. The idea that children must have such diseases as scarlet fever, measles, chickenpox, and mumps must be actively combated and mothers repeatedly warned to keep children away from disease, no matter how mild. She should be brought to see that in exposing her child to disease she endangers his life, or exposes him to such permanent defects as deafness, blindness, or an undermined constitution. All these communicable diseases are believed to be due to specific germs. For instance, the Klebs-Loeffler bacillus of diphtheria is well known and an early culture in cases of sore throat should always be taken, even if the throat has not the typical appearance of diphtheria.

VARIOLA OR SMALLPOX

In certain parts of this continent this disease is not common, but in some localities, sporadic outbreaks are altogether too common. It is not particularly a disease of childhood as all ages are subject to it. Of recent years the type has been much modified, and so mild it has been frequently diagnosed as chickenpox, or other disease.

Smallpox is frequently very fatal to young children; the contagion is exceedingly tenacious and will cling to an infected locality for a long time, despite the utmost care.

It develops in about nine to fifteen days after exposure to infection, and may begin with severe symptoms such as a chill or convulsion, severe headaches, pains in the back, vomiting and high fever with delirium. These severe symptoms are occasionally accompanied by an initial, diffuse, scarlatinal, macular, or measly rash, and a diagnosis is impossible for some days. In milder forms headache and backache are the prominent symptoms, and about the third day small red spots appear on the forehead, about the size of a pin's head, and in a few hours swell into hard pink papules surrounded by an areolar blush, which have the feeling of small shot. The eruption may

appear on the second or fourth day and usually appears first on the forehead near the hair, then face, hands, arms, body, and legs. It is usually symmetrical and may become generalized. These papules change to vesicles in four days and about twenty-four hours later become pustules, so that the lesion attains its maturity on the sixth day. The pustules are uniformly yellow, with a dome-shaped crown. In mild attacks they are scattered, but in severe attacks become confluent. The pustular stage is accompanied by increased pain, swelling, and fever. About the tenth day the pustules begin to dry rapidly and desquamation follows. At the onset there may be mild or aggravated swelling of the lymphatic glands of the neck.

SCARLATINA OR SCARLET FEVER

Scarlet fever comes on suddenly, as a rule. A child may be noticed with a flushed face, hot and dry skin, with vomiting, chill, sore throat, and "strawberry tongue." Sometimes the erythematous rash is the first symptom, usually appearing on the second day, and this first appears on the chest, neck, wrists, back, and limbs, and has the appearance of dark red pepper sprinkled liberally in the skin. The color disappears on pres-

sure. The rash may spread over the whole body within four or five hours. In severe cases the rash is much darker, having a purple, mottled appearance; it is hemorrhagic and does not disappear on pressure. The child should be excluded from school at once, and should remain at home six weeks—or until desquamation has entirely ceased. A child with skin peeling from his hands should always be sent home from school, and the facts reported to the medical inspector, or family physician for fuller investigation. The contagion is generally believed to be carried in the fine particles of skin given off during convalescence, but authorities differ widely as to this. The period of incubation is about one week. A child exposed to scarlet fever should be excluded for two weeks. Careful attention should be given to the ears, tonsils, and kidneys during convalescence. It is not uncommon for a discharging ear to be neglected after this disease and serious permanent defects are the result. The school nurse should always see that such a child receives proper attention until the condition is remedied. It should be remembered that this disease is considered to be actively contagious during the period of its early onset, from the discharges from the nose and throat.

RUBEOLA OR MEASLES

Measles begins, as a rule, with a watery discharge from the nose, chilliness, sneezing, eyes and nose more or less red, and cough. Sometimes chill, headache, and vomiting occur, and rise in temperature. A rash first appears on the neck, forehead, face, and later on the body and limbs. It is described as small, red papules which increase in size with patches of unaffected skin between, and usually appears on the fourth day. These patches often assume a crescentic form with a mottled or coppery appearance, which disappears on pressure. Coincident with the eruption on the skin, small, red spots tipped with bluish-white specks appear on the mucous membrane of the cheeks opposite the molar teeth. The child should be sent home at once, and remain away for three weeks, or until desquamation has ceased. Contagion is said to be carried by the skin and nose and throat discharges, but it is not definitely known just how the contagion is brought about. The period of incubation is from seven to eighteen days, and therefore a child exposed to measles should be excluded from school for two weeks after isolation of the sick child. The school nurse should explain to the mother that a child

does not immediately develop the disease after being exposed to it. German measles may resemble either scarlet fever or measles in the appearance of the rash, but does not tend to become crescentic as in measles. Although there may be sore throat, the tonsils are never ulcerated. The rash may appear on the second, third, or fourth day. Enlargement of the posterior cervical glands is characteristic and always present. The period of exclusion from school is two weeks. It is rarely serious.

DIPHTHERIA

Diphtheria is characterized by pains in the limbs and back, fever, chills, and sore throat. The throat is at first red, and later, patches appear on the tonsils. These are grayish white at first and later take a darker hue. The child should be excluded at once and not allowed to return to school until two throat cultures are negative. The period of incubation is from two to seven days. The bacilli (Klebs-Loeffler) are very active and may be found in discharges from the eye, ear, and nose. Wherever a purulent discharge is found it should be tested. A child exposed to diphtheria should be excluded from school for two weeks. It may be of mild form, but is frequently of severe

type, accompanied by grave heart and kidney conditions and followed by paralysis.

PAROTITIS OR MUMPS

Mumps is characterized by some fever, and pain just below the ears. The parotid glands situated just in front and below the ears, begin to swell and increase rapidly in size for forty-eight hours. Swallowing is sometimes difficult and any acid food taken into the throat causes severe irritation. The period of exclusion from school for the disease is four weeks and for exposure two weeks. Mumps is commonest from the fifth to the fifteenth year, and is very contagious, but the disease is not usually serious.

TRACHOMA OR GRANULAR CONJUNCTIVITIS

This contagious disease of the eye is not common except in cities with a large immigrant population. It is more commonly found among the very poor living in crowded dwellings, because infection is transmitted by unclean habits. Infection spreads from one child to another by the secretion from the diseased eyes being carried to another child by fingers, or the careless use of towels or handkerchiefs. Unhealthy, anæmic children with the taint of scrofula, tuberculosis,

or syphilis contract the disease more readily. The disease generally attacks both eyes. Among the children of the well-to-do, living under better sanitary and health conditions, trachoma is rather rare. Besides the usual appearance of the conjunctiva in simple conjunctivitis there are a number of translucent grayish or pinkish gray bodies about the size of a pin head, situated in and close to the fornix conjunctivæ or on the upper palpebral conjunctiva or conjunctiva of the lid; they are rarely found on the bulbar conjunctiva or conjunctiva of the eye-ball. The word trachoma simply means rough. These trachoma bodies or "sago grains" resemble somewhat the follicles in follicular conjunctivitis but are paler, more irregular in size, and scattered. The surface of the conjunctiva is further roughened by the formation of papillæ due to the folding of the inflamed and hypertrophied conjunctiva.

In the beginning the inflammation may not be attended by any distressing symptoms, but careful examination will disclose the grayish white semi-transparent trachoma bodies in the upper fornix or disseminated on the conjunctiva of the upper lid. Gradually an active inflammation arises with discharge, sensation of foreign bodies in the eye such as sand, interference with vision, and the

papillæ become greatly enlarged. This is followed by the stage of gradual absorption of the bodies, expulsion of contents, and scarring. This scarring may become extensive and by contraction cause distortion of the lids. The great danger of granular conjunctivitis is the serious complications that may attend it, such as pannus, corneal ulceration and the scarring of the palpebral conjunctiva. These conditions commonly produce serious and permanent defect in vision.

If neglected or allowed to continue for some time ulceration may follow and serious damage be done to the eye. Careful and daily attention should be maintained by frequent bathing with hot saturated boracic solution or a weak bichloride of mercury solution.

ACUTE CORYZA OR COLD IN THE HEAD

This is an acute catarrhal inflammation of the mucous membrane of the nose and throat or pharynx. There is a sense of fullness in the head, feverishness, with at first a watery, then a mucopurulent discharge, from the nose. It is difficult or impossible to breath through the nose, and mouth breathing becomes a necessity. Some children are subject to frequent attacks because of their mode of life. It is frequent in children who



WASH UP—FOREST SCHOOL. TORONTO, CANADA

get little fresh air; who are kept much indoors, who live in over-heated homes and school classrooms, who sleep in carefully closed bedrooms; who always have too much clothing on; children who are abused by a mistaken kindness of a supposed tender care that actually predisposes them to the disease that such efforts are made to avoid. Children with adenoids or polypi are also more subject to an attack.

Coryza is more common in damp, cold weather. Thin shoes with resulting damp, wet feet is a frequent cause. It is contagious and often spreads rapidly through a whole family. Children with coryza should not be allowed to caress other children or sleep with them. The best treatment is prevention—plenty of fresh air, open bedroom windows, proper clothing, a classroom at sixty degrees rather than seventy.

INFLUENZA OR LA GRIPPE

This is a highly contagious disease, and because of the serious complications that so frequently follow it in children, deserves more immediate and careful attention than is commonly given. Very frequently a whole household develops the disease because the first patient was not immediately isolated from the rest of the family. In-

fluenza is caused by the bacillus *influenzæ* of Pfeiffer, discovered in 1892. This disease is much more common in winter and spring. All ages are liable to the disease but children from two to ten years are more susceptible. Often the onset is preceded for a day or two by a mild coryza and persistent cough, and then there is an abrupt sensation of chilliness, muscular pain, or general aching of the body, with fever running from 101 degree to 103 degrees, or even higher. Even in this mild form of the disease the amount of prostration is marked and convalescence slow. The severer type of influenza is not common in children, but there is a serious tendency to pulmonary complications, such as broncho-pneumonia, pleuro-pneumonia, lobar-pneumonia, empyema, pleurisy, and tuberculosis. The most common complication, however, is middle-ear disease and enlarged glands of the neck with chronically enlarged tonsils and adenoid growths.

OTITIS MEDIA OR MIDDLE-EAR DISEASE

This disease may be caused by exposure to cold and wet, cold bathing, and foreign bodies in the auditory canal, but it is more frequently found as a sequel to other diseases such as diphtheria, scarlet fever, measles, influenza, pneumonia, acute

coryza, whooping cough, and even mumps; it is also caused by the presence of adenoids, polypi, eruption of teeth, or other defect that will cause catarrhal condition in the pharynx. Where a child is found with a discharging ear that has lasted for some time, a culture should be taken. Very frequently it takes a great deal of patient and persistent care to get these discharging ears cleared up. Parents frequently neglect this condition, not realizing the serious damage that may be done to the child, or even serious danger to which he is exposed. One school nurse in Toronto found five children in one month in which the Klebs-Loeffler bacilli were found in the discharge. In one case the discharge had lasted for six years. For some time the school had had intermittent outbreaks of diphtheria. Isolation was enforced and thus the parents were obliged to have the condition cured. The symptoms vary according to the nature of the attack, which may be quite intense causing severe earache, violent headache, fever, restlessness, or even delirium and convulsions. In the catarrhal form there is earache, slight deafness, perhaps noises in the ear, or even dizziness. Serious consequences may follow even the milder forms such as permanent deafness, mastoid disease, cerebral abscess, facial paralysis

or marked depreciation of the general health. No matter how lightly the mother may speak of this condition the nurse must see that the child obtains careful and persistent treatment until cured. Quietly, courteously, but persistently insist that the mother's "wonderful cure" will fail, that even her far-famed poultice will fail, and that if she wishes to save her child from a serious handicap in life she must obtain competent medical treatment for her child.

TINEA OR RINGWORM

This disease is caused by a vegetable parasite and is most commonly found on the scalp and less often on the arms, body, and legs. It begins as a red papule and gradually spreads, keeping a somewhat circular appearance; the border is elevated and sharply outlined while the center is depressed. The hairs become brittle and break off, the stumps can be more readily seen with a lens. The spores are found on the roots of these stumps on microscopical examination. In cases of suspected ringworm this test should always be made for the mycelium of the fungus.

If several patches coalesce it may become irregular in outline. Sometimes the characteristic "ring appearance" is lost, and the disease appears

scattered. The hair should not be brushed for that spreads the spores. Sometimes the disease is very obstinate to treatment and will last for months, even a year or two. It is sometimes necessary to pull all the hairs out (epilate); only a small area should be done at one time. Ordinarily if the hair is cut short and the application thoroughly rubbed in, it will yield to persistent treatment. Wash thoroughly with tr. green soap and hot water. Dissolve ten grains of bi-chloride of mercury in alcohol, add to five ounces of olive oil and kerosene, equal parts. Apply thoroughly, saturating the scalp. Alternate the treatment every three or four days with the application of tr. iodine. If it becomes very irritable it may be necessary to discontinue treatment for a day or two. Twenty grains of white precipitate to an ounce of lanolin also gives good results. The patch should be kept covered with flexible collodion to prevent contagion.

FAVUS

This disease is sometimes called honey-combed or crusted ringworm and its usual seat is the scalp. Rarely it may be found on the skin or nails. This is also a contagious disease due to a vegetable parasite. It appears as small, cup-

shaped, pale yellow crusts around the roots of the hair and has a characteristic odor of mice or musty straw. It is more common among children than adults. It is usually found among the very poor, living under unhealthy conditions. It responds more easily to treatment, but if it does become chronic it is apt to cause baldness. Wash thoroughly with tr. green soap and hot water, after cutting the hair as short as possible, and apply same treatment as in ordinary ringworm. Treatment must be persisted in for a month or more.

SCABIES OR ITCH

This is a contagious disease of the skin caused by an animal parasite, the itch mite, which is small, with a yellowish white, rounded body scarcely visible to the naked eye. The female parasite burrows through the horny layer of the skin head first and then through the mucous layer by wriggling movements and deposits her eggs, usually about fifty, in the deeper layers of the skin as she progresses. These ova hatch out in about ten days, and the active female itch mites begin at once to burrow in other directions. These burrows can be discovered, if scratching has not been too vigorous, as slight linear elevations in the skin about $\frac{1}{8}$ to $\frac{1}{2}$ inches in length. The end

of the burrow is a darkish spot and here the mite can be picked out on the point of a needle. The presence of the parasite causes an inflammation of the skin with the formation of vesicles, and pustules. The most common situation of the lesion is the webs or folds of the fingers and toes where the skin is least thick or the front of the wrists, ankles, and elbows, but may be found almost anywhere on the body. The marked symptom is intense itching, worse at night, which causes scratching. Scratching causes excoriation and formation of crusts and, after the disease has been present for some time, it may not be readily recognized. The first thing to do in treatment is to give a hot bath with vigorous scrubbing and a liberal use of soap. Then dry and thoroughly rub in sulphur ointment, thirty grains to an ounce of lanolin, wherever the disease is present. The application should be made twice a day or in severe cases oftener, for two or three days and then another hot bath and vigorous scrubbing. Before reapplying the ointment the skin should always be carefully washed. There must also be a complete change of underwear and the old ones boiled before again being used. This disease is usually found among the unclean and may be found among adults as well

as children. Uncleanliness is the predisposing cause. It is not readily transmitted to others, contagion occurring only by close and prolonged contact. There is also what is known as Norwegian itch, grain itch, and barley itch.

IMPETIGO CONTAGIOSA AND FOLLICULAR IMPETIGO

This disease is due to inoculations of streptococci causing a pustular eruption which rapidly becomes infected with staphylococci. The eruption begins as erythematous spots which soon become large vesicles and these rapidly develop into pustules. These pustules soon break, discharging a sero-purulent yellow fluid which dries rapidly and leaves yellowish scabs. These scabs have no surrounding areola of inflammation, but look as if they were stuck on the skin with gum. These scabs are at first easily removed but later more firmly adherent and their removal causes bleeding. There may be but a few lesions or a whole body may be covered. There is usually some fever, and involvement of nearby lymphatic glands, which become enlarged and tender. It appears most frequently on the lips, around the nose or ears, or other parts of the face, back of the head or neck, and may be transferred to any part of the body by scratching. It spreads by

successive crops. It is frequently found in debilitated and scrofulous children and children with pediculi, and is often complicated with boils. Treatment consists in removing the scales with a weak bichloride solution (1 in 2000) and applying white precipitate ointment. This should be done daily until cured. There are other forms of impetigo. In infants, even well-nourished and free from the taint of syphilis, a bullous impetigo is sometimes found, characterized by bullæ on the thighs, buttocks, or face. In these cases it is sometimes fatal. Then there is the impetigo that is distinctly of staphylococcic origin. Follicular impetigo begins at the root of a single hair, which projects from the center of the pustule. The scales are smaller and there is an inflammatory areola around each. The lesions are pustular from the first and have no vesicular stage. The single hair projecting from the center of the pustule is very characteristic.

PSORIASIS

This first appears as red papules the size of a pin's head, which soon change to fine white, silver gray or asbestos-like scales. When these are removed a shiny blushing surface with a few bright red spots is revealed. The papules appear

in patches of a somewhat oval shape, which has a narrow zone of redness around it. These patches fade in the center, leaving rings with a gradually narrowing border, until it gradually disappears. Its favorite starting points are the tips of the elbows and points of the knees, surfaces of the limbs or the body. Occasionally it may be found over the whole body. There may be little or no itching. This is more common in the acute forms. First attacks of the disease may not last long, but it is essentially a chronic disease and it is almost sure to recur. The disease is probably to some extent hereditary or there is special predisposition. It is more common in young adults than in children. The cause is unknown.

ECZEMA

This is a word that is used pretty commonly to describe skin eruptions. The word means to boil over. It is an inflammatory condition of the skin accompanied by the formation of papules, vesicles, pustules, scabs, and usually with a "weeping" surface. It is difficult to say there is any characteristic appearance because of its varied manifestations. In fact any skin eruption that has no characteristic lesion is apt to be called "eczema." The name is restricted by some

writers to those catarrhal inflammations of the skin where there has been, is, or will be, during its development serous exudation on to the surface or into the deeper layers of the skin. This will exclude inflammation due to chemical or external irritants which may present indential lesions, but appearing only at the site of irritation. The various lesions of eczema may be but different stages of its development. It may be said, however, that the vesicle is the most common lesion observed in the beginning. Sometimes the papule or pustule is the most prominent lesion. The eruption is usually ushered in by a sensation of itching and burning with swelling, redness, and in the severer cases, some constitutional disturbance. As a rule, however, one of the most remarkable things about this disease is the slight constitutional disturbance even where the itching is intolerable and maddening beyond belief. Certain parts of the body are more commonly the seat of eruption, but it may appear anywhere; in fact it may be found healing in one place when a fresh outbreak appears elsewhere. Its multi-form appearance is the most characteristic thing of eczema. It varies also according to the region affected. The nostrils, the auricles and backs of the ears, the scalp, the face, the wrists, the feet,

the fronts of the arms and legs, the palms of the hands, and even the nails, all have the special appearance of the disease. In children the most common is that of the scalp, ears, or nose. Elderly people are more susceptible to the persistent and severe types. Scratching may cause all kinds of secondary conditions, such as boils, bullæ, or severe constitutional disturbance. Various creams, pastes, and lotions are used in treatment. Those containing the ointment of oxide of zinc or the ointment of salicylic acid or liquid tar have given the best results.

URTICARIA—NETTLE RASH OR HIVES

This rash is called a wheal, a raised patch of skin, flat, firm, and at first uniformly red, but later becoming white in the center, the border remaining bright red and beyond this is an areolar blush. As the wheal subsides, the border becomes pale and the center red. Wheals vary in size from one half to two or three inches, and are never symmetrical. They may last only a few hours, or appear in successive crops day after day, for weeks or even months, but the condition is usually very transitory. The symptoms are itching and burning. The causes is usually some local irritant as the bites of insects, or sting of

nettles or wasps, or some error in diet, or the presence of pin worms, or round worms, or some other parasite. When due to the latter causes the eruption usually appears on the trunk. The treatment is to remove the cause and give alkaline, bran, or linseed bath to relieve itching.

HERPES LABIALIS OR COLD SORES

This begins as a small red spot with a feeling of heat and itching. Soon serous effusion follows forming vesicles which shrivel up in a day or two, leaving yellowish-brown crusts. These crusts detach after some days, leaving no scar but a slight stain that disappears later, the whole process taking one or two weeks. They appear most frequently on the lower lip, but also on the upper lip, or any part of the face. They usually occur with a cold, influenza, scarlet fever, typhoid fever, etc. The only treatment required is application of a soothing or astringent lotion or salve, as bay rum, witch-hazel, or oxide of zinc ointment.

SEBORRHŒA

This disease is caused by the over-activity of the sebaceous glands and an alteration of their secretion. There is a dry (*seborrhœa sicca*) and an oily (*seborrhœa oleosa*) form, and both are most

common on the scalp. In infants the disease may give rise to large, dirty, yellowish gray masses usually near the forehead. Seborrhœa almost invariably begins on the scalp and spreads to the face, body, and limbs. The dry type is most common on the scalp and not uncommonly the only symptom of the disease is the shower of scales (dandruff) that falls from the head. If neglected the hair will gradually fall out. The oily form is more common on the face and especially on the side of the nose, the furrows on each side, and the corners of the mouth. But it also occurs on the trunk and limbs. It may occur in debilitated or robust children. Treatment consists of removing the scaly masses by thorough washing with tr. green soap and water, and applying sulphur ointment to the oily form, and sulphur lotion to the dry form ($\frac{1}{2}$ -1 ounce of precipitated sulphur to 8 ounces of distilled water).

ICHTHYOSIS

This is sometimes called fish-skin disease and is a congenital affection. The skin is very dry, rough, and scaly, having a somewhat branny appearance. There may be some itching but the most marked symptom is the extreme sensitiveness to cold. The skin chaps readily and deeply and is

more prone to eczema. No treatment is very satisfactory. The scales should be removed and skin kept soft by alkaline or bran baths and inunction of lanolin or cocoanut oil.

MOLLUSCUM CONTAGIOSUM

This is a new growth of the skin rather than an eruption. These growths are firm, small, shiny (like mother of pearl) and roundish with a flat top and central opening, discharging a milky fluid. This discharge contains degenerate epithelial cells. These growths at first sit flat on the skin but afterwards develop a stem-like pedicle. They are usually multiple and most commonly found on the eyelids, face, neck, breast, and limbs. This disease is found most commonly among children of the very poor, living under very unhygienic conditions. Treatment consists of touching with pure carbolic acid and covering with flexible collodion, or have them cut off.

VERUCCA OR WARTS

This is another but much more common new growth of the skin, or papillary growth, as such are called. The common wart, or verucca vulgaris, is generally found on the hands but may be found elsewhere. It is a small, sessile growth,

with at first a smooth surface which gets roughened and even fissured at the base, and darker in color. Warts may be single or multiple. They can be removed by touching them with nitric acid. This can be done by dipping the end of a match in the acid and applying to the wart. Care must be taken not to touch any part of the skin or to spread the acid by applying a dressing.

PEDICULOSIS

There are three species of the animal parasite that causes this affection which is characterized by great itching. The head louse is somewhat smaller than the body or clothes louse. It is most commonly found at the back of the head where the hair is thickest or just back of the ears; and the ovæ or nits are most easily found by pushing the hair back a little. The body louse is found in the seam of the underclothing or under the neckband. The lesion is caused by the parasite feeding, which thrusts its sucker into the opening of a sweat duct and so extracts blood. When the sucker is withdrawn a tiny speck of blood wells up and this small red speck is characteristic of the disease. Of course, this is soon obliterated by scratching, which causes larger hemorrhage, excoriations, and pustules. The head

parasite lays about fifty eggs, each ovum being attached to a separate hair by a gelatinous material which binds the ovum so firmly to the hair that it can only be removed by slipping it along to the end. It is necessary sometimes to do this for no one remedy can be depended upon to kill the ovæ. The body parasite multiplies much more rapidly than the head parasite. When these parasites have been long present, certain changes and pigmentation of the skin occur. In bad cases the glands of the neck may become inflamed and enlarged, or considerable dermatitis may arise due to the scratching. The first part of the treatment is to get rid of the parasite. The hair is saturated with equal parts of kerosene and sweet oil and the head tied up over night. This kills the parasites and next morning the hair must be thoroughly washed with hot water and soap and carefully combed with a fine-toothed comb. Sometimes it is most difficult to destroy the ovæ or nits. Saturate the hair with hot vinegar and again comb carefully. Or the ovæ may have to be pulled off one at a time. In small children where the condition is obstinate, the hair should be cut short. Older girls do not like to submit to this, and if above treatment fails, follow it by thoroughly smearing the scalp and

hair with white precipitate ointment. The whole treatment should be repeated, if necessary.

FURUNCULOSIS OR BOILS

Boils may form on any part of the skin, but are most common on the neck, face, under the arms, and buttocks. They may be single or multiple, or come out in crops, which is known as follicular furunculosis. A boil is caused by the staphylococcus and usually begins in a hair follicle or sebaceous gland or sweat gland. It begins as a red papule, hard and tender. The papule enlarges to a nodule with a surrounding areola of redness and swelling. The skin becomes purple, tense, and glistening, "points," or shows white and then "breaks." Just before this happens, throbbing is quite a marked symptom, with great tenderness and heat. When it breaks the central part is seen to be a white puffy slough or core, which is thrown off in a day or so. The pain is then much relieved, healing proceeds rapidly and leaves a scar at the site. Furunculosis may follow the acute fevers, and is common in scrofulous, debilitated, or anæmic children. In the matter of treatment, if found early, boils may be aborted by painting with tr. of iodine or application of boracic acid (saturated solution) fomentations.



PRIVATE INDIVIDUAL EXAMINATION OF HEAD

Where abortive treatment fails the boil should be incised and evacuated. Evacuation should be thorough and surrounding area carefully and antiseptically cleansed, so that other foci are not formed. Very often constitutional treatment is the important requirement.

CHAPTER X

TUBERCULOSIS AND ORGANIZATION OF ANTI-TUBERCULOSIS WORK IN PUBLIC SCHOOLS

THIS is a communicable disease due to the bacillus tubercle. It is a very wide-spread disease, and common in animals as well as in man. It is found in cattle and pigs more commonly than other animals, but it is also found in sheep. This is called bovine tuberculosis. Avian tuberculosis is fairly common among birds. Fortunately bovine tuberculosis is not easily transmitted to man, for cattle, pigs, and sheep form the principal meat supply for human consumption. Bovine tuberculosis is, however, found in the human species and more commonly in children. In the present day great care is taken to inspect the meat supply of cities, and dairy herds are frequently given the tuberculin test to see that the milk supply does not come from infected cattle. Apes and monkeys in confinement are very subject to the disease.

Tuberculosis is sometimes hereditary, but it is probable that this is rare and occurs through the blood stream to the foetus. Of course, one may inherit a weak constitution, which is exceedingly common, and this means a lessened resistance to disease and more especially to tuberculous disease. In this way the predisposition to the disease is general, but both general and local predisposition may be acquired by unhygienic habits of life, or by the presence of physical defects.

No age is exempt. But it is much more common in the young and more frequent in infancy than in later childhood. The disease may be acquired in the first few days or months of life from the attending accoucheur, midwife, or nurse, or from the mother or other relative with the disease. Many things predispose to tuberculosis, such as crowded tenement houses, with their poor ventilation, closed and overcrowded bedrooms, and restricted open air life; previous attacks of other diseases, such as bronchitis, pneumonia, pleurisy, influenza, whooping cough, or measles; the presence of diseased tonsils, adenoids, or postnasal growths. Poorly nourished, debilitated, strumous children are much more subject to tuberculosis. The ravages of this disease even yet are appalling. Men have been slow to

realize the fearful harvest of death from this one disease. For many years it was looked upon as an inscrutable affliction of Providence. Even yet civilization has not gotten far past the stage of looking not only upon this disease, but all diseases, as a special visitation from God, instead of realizing it is the scourge, the punishment of broken laws—the laws of health. Too many are more ready to pray for deliverance from disease than to work for their salvation, for it means eternal vigilance and never-ending work to keep person and premises clean and sanitary. Cleanliness is next to godliness, and is man's work. Disease must be fought by a knowledge of the Laws of Health, and living in obedience to these laws.

Tuberculous disease may be general or local, may involve one organ, or every organ in the human body, or any part of it. In 1884, Robert Koch discovered the bacillus that causes the disease, and our enemy in this particular case was disclosed. Following this discovery the many manifestations of the activities of this bacillus were demonstrated. It was then learned that most of the diseases of children, in the spine, hip-joint disease, white swelling of the knee, enlarged glands of the neck, scrofula, chronic skin condition, disease of the intestines and brain as

well as disease of the lungs, liver, kidneys, and bladder are caused by the same bacillus. The tubercle bacilli usually enter the body through the respiratory or alimentary tract. Fingers, even those of adults, too easily find their way to the mouth, carrying contagion with them. Contagion can also be transmitted by food or milk or in other ways. Commonly the bacilli are taken up by the lymphatics of the mucous membranes on which they have lodged on entrance and are carried to the lymph glands of the neck and mediastinum. In these lymph glands the disease may remain latent and may be quiescent for years. If the health becomes lowered the disease becomes active. Many cases of tuberculosis showing in early adult life, from fourteen to twenty-four, are really due to these previously infected lymph glands.

During the first two years of life tuberculous disease of the lungs and brain is the most common. After the third year, tuberculosis of bone, spine, joints, glands, and intestines become more common. It is not necessary here to go into the various phases of the disease, nor its many manifestations in the different organs, for the important thing for the school nurse to bear in mind is that early examination by a physician and early

attention to a child's life habits may *prevent* tuberculosis. It is far better that the school nurse should be needlessly alarmed over many cases than that one child be overlooked and become a victim to the disease. There is a widespread and popular belief that pulmonary tuberculosis gives warning of its presence by pain. This is practically never true. Pain is rarely, if ever, a symptom of the onset of the disease, but much more frequently a symptom of advanced disease.

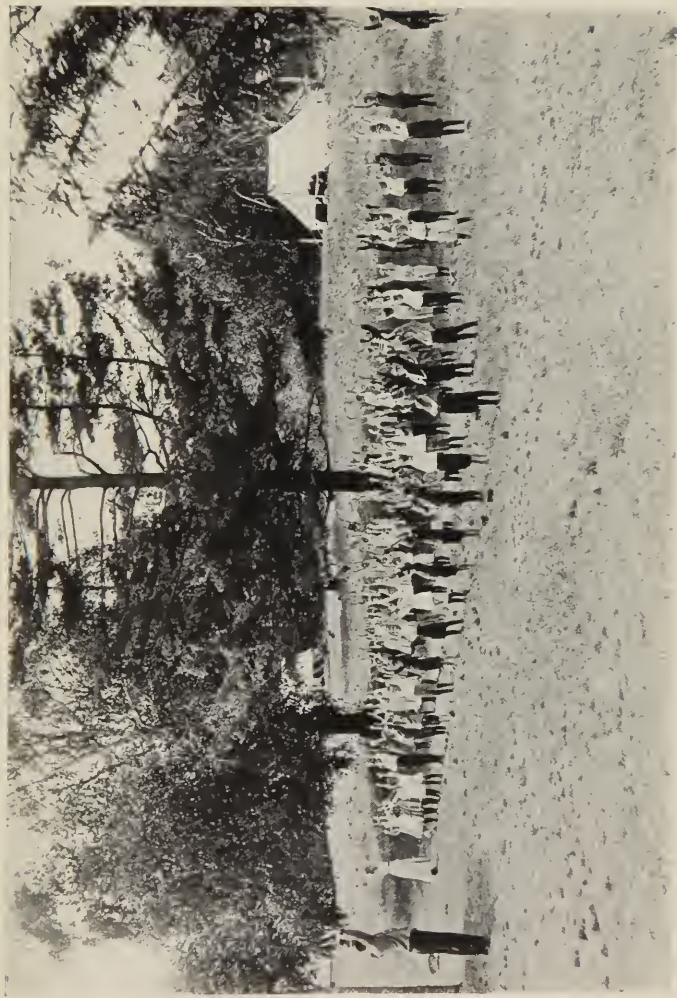
Sunlight and exposure to air will kill the bacilli in three to six hours. The bacilli have no power of transportation *per se* and even where carried in dust are usually dead by their exposure to sunlight and air. If we can keep the bacillus-laden sputum from our food, bread, vegetables, fruit, out of our milk, off our fingers and clothes, whereby we can keep the bacilli out of our mouths, we have practically abolished the possibility of invasion of our bodies. Our risk, therefore, can be reduced to a minimum by intelligent and strict cleanliness and sanitation. The first measure of protection is the absolute suppression of the disgusting habit of promiscuous expectoration. The first law is "Thou shalt not spit—promiscuously about." All people afflicted with this disease

cannot be removed to a community of their own, and away from others, but they can stop exposing others needlessly to the disease. It is well to point out that this habit exposes their own already weakened systems to further invasion. A tuberculous mother should not nurse her babe nor kiss it upon the mouth. No nurse, maid, governess, teacher, or relation who has pulmonary tuberculosis should be employed about children. The danger of contagion from tuberculosis of bones and glands is extremely slight unless there is ulceration or necrosis with discharge. Delicate children should be given pasteurized milk. It should be specially remembered how frequently pulmonary tuberculosis in children follows measles and whooping cough, and exposure to those diseases especially avoided.

With the knowledge that the disease is curable and more important still *preventable*, brave leaders took heart and turned to combat this scourge of humanity. Many things had to be learned, many life-long habits and customs hoary—almost holy—with age had to be ruthlessly condemned and prohibited. The first great weapon with which to fight this disease is the knowledge that it is spread by contact with those who have the disease. Contagion must be restricted by quarantine of

those afflicted, at least prevention of close association with others, and more especially with children. Those with the disease must be prevented from carelessly and promiscuously spitting about the home or on the street, for the sputum coughed up by these patients contain millions of the bacilli. Whatever receptacle is used for this sputum—sputum box or handkerchief—must be carefully destroyed by burning. The same scrupulous care must be taken in the bedroom of the sick, with the clothes, dishes, and other utensils.

The next great weapon was the discovery or rediscovery of the value of sunshine and open air life, wholesome diet, and regular sleep and rest. Under this régime of life from seventy to ninety per cent. of those afflicted will recover if the disease has been recognized in the early stage, the earlier the recognition the surer the cure. Notwithstanding the modern emigration from rural districts to cities, and the consequent aggravation of crowded conditions therein, tuberculosis has actually decreased twenty to thirty per cent. in the last twenty years. Some of this must be due to sanitary reforms, better housing, better drainage, higher wages, better food, a greater public interest in health factors, and a wider knowledge of the disease. But if these life habits are strong



PHYSICAL TRAINING—FOREST SCHOOL. TORONTO, CANADA

weapons in the fight for the cure of the disease, how much stronger must they be in prevention. In the fight against the disease, it has been discovered that children who have lived in unhygienic surroundings; who have been cooped up in closed and overheated schoolrooms and bedrooms; who have had unwholesome and insufficient food; who have drunk tea and coffee instead of water and milk, were weakly, poorly nourished, and highly nervous children, and were much more subject to the disease. So the cure, protection from exposure, sunshine, plenty of fresh air, regulated diet, rest, and sleep, must be the agents used to keep children on a higher plane of health, vigor, and vitality, and out of the danger zone of attack. Parents should be taught that care and watchfulness of their children to protect them from tuberculosis does not mean coddling and keeping them indoors. Overheated houses and schools is one of the most potent causes of predisposition to the disease. Similar tendencies are produced by overclothing of children at their play, games, and sports. These children get heated easily and quickly and while resting catch cold. In Canada, it is getting very common to see children walking to school in fur coats. Children do not need fur coats—not while walking or playing. They may

be needed where children have to be driven long distances to school. Any unhealthy or catarrhal condition of the mouth and throat due to unclean and decayed teeth, diseased tonsils, adenoids, postnasal growths, or nasal polypi, predispose in the same way to this disease. Cure is a poor weapon but Prevention is a weapon stronger than Achilles who had a vulnerable spot. If we keep to hygienic, healthy habits of life, we not only obtain health and vigor, but efficiency and success and constant enjoyment of life. It is true that tuberculosis is often due to poverty, overwork, and insufficient and unwholesome food, but in this country, at least, it is often due to the indolent indulgence of overheated rooms, overeating, and overclothing. The flesh pots of Egypt appeal to all alike! This indulgence is not confined to the well-to-do, but may be found combined with the dark, unventilated living-room, in city tenement or village cottage, where children crawl and their elders spit.

In this campaign for health, the campaign for more open air life, better ventilation, more sunlight, pure water, wholesome food, sufficient rest and sleep, the campaign for fresh air, hygienic homes, and sanitary premises it is well to remember two things. First: that tuberculosis is caused by

direct infection five times as often as by heredity and hereditary predisposition. Second: that it is not the crowded city, or the most populous district that has the highest death rate from tuberculosis. The tuberculosis death rate of Tennessee, Kentucky, Virginia are much higher than that of Pennsylvania, New York, and Massachusetts. In Ontario the sparsely settled districts of Peterborough, Muskoka, Parry Sound and Rainy River have a higher death rate from tuberculosis than more populous centers; the ravages of tuberculosis in the Highlands of Scotland are strikingly appalling.

ORGANIZATION OF ANTI-TUBERCULOSIS WORK IN THE SCHOOLS

The organization of anti-tuberculosis work in every school in this country, in a systematic way, and the adoption of a definite plan of action would be a tremendous assistance in the fight against the great white plague. The following plan, the essentials of which could be adopted in the smallest and most remote school is suggested as basis of common action through the medium of the schools.

Every city, town, or county, or a number of counties united for the purpose of anti-tuberculosis work should appoint a special tuberculosis

medical inspector, one who is making a specialty of this particular branch of medicine, to examine all children sent to him by the schools.

Let us divide tuberculosis cases into two classes: 1st, those without a history of exposure to infection in the home; 2d, those with a history of exposure to infection in the home. Many in either of these classes will be only suspect cases and should be first examined by the medical inspector of schools. If he cannot make a positive diagnosis the child should be sent for examination to the special tuberculosis inspector, and a report made to the head office, besides recording the history in the usual way on form 3 (see chapter on card system of reports). Reports of all new cases of suspect tuberculosis and on all old cases not yet recorded on form 3 should be sent by the medical inspector to the special tuberculosis inspector and to the head office. This report should contain the following information: name of school, family, address, names and ages of all children, their present whereabouts and condition of health as far as known, history of contact of exposure, and philanthropic agencies interested, if any. Cases reported should be examined by the special tuberculosis inspector as soon as possible, or taken to a chest clinic at a hospital or dispensary, if such

exists within a reasonable distance. Children who are examined by the special tuberculosis inspector, or at a chest clinic, should be reported to the school medical inspector of the schools to which they belong, and the results of the clinical examination, X-ray, Von Pirquet test, and bacteriological examination stated, with advice as to continuance or discontinuance of school attendance. The cases reported by the special tuberculosis inspector, and no others, should be recorded by the school medical inspector or school nurse on form 3 with colored stickers about the size of a dime. A red sticker placed on the left-hand upper corner of this form denotes a positive and open case of tuberculosis; a blue sticker a positive but closed case of tuberculosis; a yellow sticker a negative case; a green sticker a case not yet determined. A record of every child examined to determine if tuberculous infection is present should be kept in the head office. This record should include 1st, date of special examination; 2d, family address; 3d, names and ages of all children; 4th, name of school that the children attend; 5th, brief history of exposure to infection, if any, such as, a member of the family, an infected house, exposure at occupation, the time and degree of exposure; 6th, result of the Von Pirquet test;

7th, result of examination of sputum; 8th, number of the X-ray; 9th, clinical evidence of disease; 10th, diagnosis and by whom made; 11th, a record of the home and social conditions; 12th, recommendation, whether the child should be sent to a sanitarium, preventorium, remain at home, or continue at school.

This work should be carried on in conjunction with the family physician and dentist, the chest clinics at the hospitals or dispensaries, missions, social service organizations, and the Board of Health. All existing organizations should be used in order to reach the largest number of children possible. As soon as there is reasonable ground for investigation, efforts should be made to bring that timely aid which will ultimately be a great factor in lessening the prevalence of tuberculosis among school children and therefore among adults.

Where there is a family physician he should be communicated with in order to obtain his assistance and to let him understand there is no thought of interfering with his patient contrary to his wishes. Where examinations are made in the schools they should be arranged by the school nurse, who gets the written consent of the parents for the examination. She should have the mother

present if possible, as this is a considerable help in obtaining an accurate history. Moreover, under such circumstances the mother is much more likely to carry out the recommendations given.

A tuberculin test should be made for each case. All positive and open cases, those with sputum containing tubercle bacilli, or with discharging joints or sores, having pus containing the tubercle bacilli, should be excluded from school. These children are a menace to everyone about them, and either should be carefully supervised at home or, better, placed in a sanitarium. The closed cases are those which have given positive tuberculin reactions with clinical evidence of tuberculosis. Where home conditions are not detrimental to the child's health, he may continue to attend school, without danger to himself or to others. But if the home conditions are unhygienic and unhealthy such children are better placed in a preventorium or forest school where their recovery is practically assured.

CHAPTER XI

DERANGEMENTS OF NUTRITION

THESE derangements are much more common in infants than in later life, and frequently very serious and puzzling in infants under one year old, when such conditions may be mistaken for constitutional disease. The taking of food does not necessarily mean that the body is being properly nourished. Derangement of nutrition may be due to defective functions of the digestive organs, so that food is neither digested nor assimilated. Food must be assimilated in order to nourish the body and supply its energies. The production of energy such as heat, motion, or work means body waste. The building up or constructive processes of the body must be greater than the breaking down or destructive processes, so that the child may grow and keep its strength. If assimilation of food is imperfect the waste exceeds the nutriment. The difficulty originally is more frequently with the kind of food rather



PLAY TIME—FOREST SCHOOL. TORONTO, CANADA

than the imperfect function of the digestive organs or the lack of food. Too frequently mothers give no thought to the kind of food they should give their children, yet this means life or death, robust health or semi-invalidism, efficiency or incapability, happiness or misery to the child. Let the emphasis always be put upon the fact that it is not the *quantity* but the *kind* of food. Over-feeding or unwholesome food will produce the same results as insufficient food. Frequently mothers allow children to take anything on the table the same as an adult. Mothers seem to think that the child can take adult food and drink, but they would be horrified if any one asked them to do adult work. Where a child is not regularly gaining in weight, careful search should be made by a reputable physician for derangement of nutrition.

INANITION OR ACUTE STARVATION

This is due to lack of food either because it is unobtainable as in extreme cases of poverty or refusal of food as sometimes happens in young infants or sick children. It may be due to an inadequate quantity of food or food of an inferior quality, but quite frequently it is due also to improper food. When it is due to over-feeding

or feeble digestion and consequent imperfect assimilation the symptoms of inanition will be mingled with those of indigestion. Loss of weight may be gradual but sometimes it is quite rapid. The pulse is weak and rapid, and circulation in the extremities poor. The skin is cold and often covered with a clammy perspiration. The child is pale, fretful, respiration is increased, and the kidneys sluggish or inactive. At first there is usually constipation and later diarrhoea and a rise of temperature, or a raised temperature may be present from the onset.

MALNUTRITION

Inanition, malnutrition, and marasmus are different phases of the same condition, namely, interference with nutrition. If this nutritional disturbance is acute in its onset and marked by great severity, it is called inanition, and is apt to be mistaken for such conditions as acute indigestion, gastro-enteritis, or even meningitis. Marasmus, like malnutrition, is slow in its onset but is characterized by much greater severity. Malnutrition is exceedingly common and is due to feeble powers of digestion and assimilation. This again is due to inherited physical conditions, or long-continued unhygienic habits of life. Less

frequently it is a sequela of a severe acute illness. These children are always below weight and normal development. The whole life habits of the child must be carefully inquired into. There is often a high nervous temperament, lack of sufficient sleep and rest, an irritable temper, lack of power of concentration, a vicious appetite, constipation, a general lack of muscular tone, and not uncommonly a rather large head and prominent abdomen. It is needless to point out that all children who are poorly nourished may not be cases of malnutrition. Great care must be taken to exclude such conditions as tuberculosis, rickets, congenital syphilis, and chronic organic disease of heart, liver, or kidneys.

MARASMUS OR WASTING

Marasmus is the extreme form of malnutrition, more frequently found in infants, but found also in later childhood. Marasmus is a big factor in the high infant mortality of our large cities. Of course, wasting occurs in many chronic diseases, but marasmus is entirely due to nutritional disturbances. It is often found in children of premature birth, artificially fed children, children with inherited constitutional weakness, and in children living under squalid conditions of extreme

poverty. Wasting is often extreme—until the child is almost a skeleton—and is accompanied by hæmic heart murmurs, general œdema, bed-sores, and painful dentition. A little later the child dies of some acute disease.

RICKETS

This is also a nutritional disturbance due very largely to an improper diet. While its important manifestations are in the bones it must not be looked upon as a bone disease; it also affects the muscles, ligaments, mucous membranes, and almost all the organs of the body. It is very common in the large cities, in artificially fed children, and in those having had an improper diet. The most important cause of this disease appears to be lack of sufficient fat and proteids, and an excess of carbohydrates in the diet. Most of the proprietary foods advertised for children have this defect. Of course, unhygienic surroundings aggravate the tendency to rickets where the diet is improper. In experiments with animals it has been shown that withholding milk from the young and feeding them instead upon meat, vegetables, and starches is sufficient to produce rickets. In north countries where fat constitutes a large part of the diet, rickets is very uncommon. In the

south where there is more outdoor life and more frequent maternal nursing it is also rare. Children with rickets are, of course, more subject to acute diseases.

CHAPTER XII

ENLARGED TONSILS AND ADENOIDS—DEFECTIVE HEARING AND VISION

MOUTH breathing is a bad habit, but no child ever becomes a mouth-breather as long as he can breathe easily through his nose. In the roof of the throat of mouth-breathers spongy growths block the posterior opening of the nostrils into the throat. This spongy mass is made up of a number of small lobules and the tissue is so much like that of lymphatic glands that this spongy mass was called "adenoids," which means gland-like, and later these were called postnasal growths. They are just behind the nasal chambers at the top of the throat, behind and above the soft palate, in the space called the naso-pharynx. It will be readily understood, therefore, that mouth breathing cannot be stopped by simply telling the child to keep his mouth shut, and any attempt to enforce this command is ignorant cruelty. Whatever the cause of the adenoids, whether due



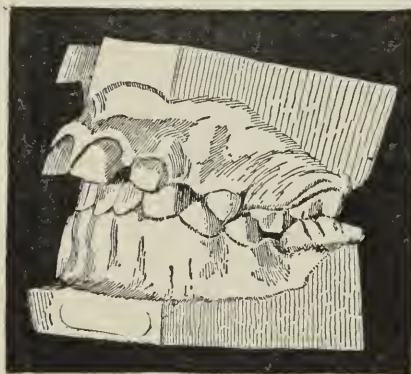
DINNER—FOREST SCHOOL. TORONTO, CANADA

to sucking a comfort in his babyhood, or repeated colds, or an attack of measles, or scarlet fever, or diseased tonsils, or decaying, putrescent teeth, the thing to do is to get rid of the blockade. The adenoids *must* be removed, if the parent is going to be fair to the child. The child has a heavy handicap on his best physical and mental development. Take it away! The facial features in long-standing cases are so marked that he who runs may read: the open mouth, the vacant expression, the listless eye, the slow mental effort, the sluggish action in body and mind, the short upper lip, the contracted nostrils, the irregular teeth, the narrow chest, the sunken breast-bone, and the general under-development are characteristic. These conditions are not wholly due to the fact that air enters the lungs through the mouth rather than through the nose, but also to the direct influence of the adenoids. They interfere with breathing, digestion, smelling, tasting, and hearing. The ears are connected with the throat by canals (eustachian tubes) which open into the throat just three quarters of an inch below this so-called third tonsil or pharyngeal tonsil, which when enlarged forms the adenoids. This pharyngeal tonsil is naturally about the size of a hazel-nut. When enlarged it may become the size of a robin's egg,

a walnut, or even as large as a small hen's egg, and



Child before treatment



Teeth of Child before treatment

great possibility of deafness.

If the nasal chambers are plugged with diseased

forms a pulpy mass of many lobules. Thus enlargement not only causes blocking of the nostrils but also of the eustachian tubes or ear canals. Even before this blocking happens, infection will have passed from the chronically diseased adenoids up the eustachian tubes into the middle ear, where it causes otitis media, inflammation, and earache, with a

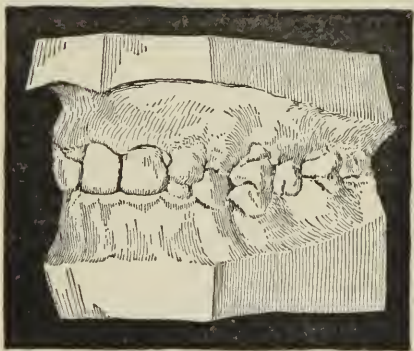
and swollen tissue, and thick muco-purulent discharge, the taste and smell must soon be decreased or almost lost. These discharges also find their way to the stomach, along with pus and debris from decaying teeth and unhealthy gums, and soon spoil the appetite, upset digestion, and enfeeble the general health.

The interference with breathing also causes a sharper arching of the palate or roof of

the mouth, so that there is contraction of the upper jaw; by the constantly open mouth the



Same child after treatment.



Teeth of same child after treatment.

lower jaw is thrown slightly forward, so that the teeth of the upper and lower jaws do not come together or lock, and we have what is called malocclusion, a serious interference with mastication. This narrowing of the arches of the jaws causes crowding of the teeth so that the front teeth project forward, and others erupt unevenly.

Diseased tonsils always seem to be able to cause a peck of trouble. They seem to be an entry for germs of many serious diseases, such as rheumatism, tuberculosis, diphtheria, scarlet fever; they are considered, too, not infrequently the source of serious joint diseases and even heart disease.

The removal of adenoids is usually a simple matter and attended with practically no danger. Not all enlarged tonsils should be removed, but when they become so large that they encroach on the throat space, or are badly diseased, they should be removed by enucleation. It is often a wise procedure to take a swab and culture of the throat before the operation, to show the absence of virulent germs.

Trifling and simple as these operations are there is nothing gives more gratifying or surprising results. The rapid improvement in a child's health, his mental alertness, and school progress are almost unbelievable. He is aroused from his lethargy;

he grows and expands in a most remarkable way; he becomes keen in his school work and generally overtakes his normal grade in school. The change from dull, slow, colorless, stupid-looking boys with discharging noses, sleepy eyes, round shoulders, contracted chests, and puny bodies, to alert, erect, active, clean, bright-eyed, intelligent boys is a striking picture not soon forgotten. It may be necessary to teach the child to breathe through his nose after the operation, for he has to overcome the habit of mouth breathing.

DEFECTIVE HEARING

Defective hearing is a serious handicap to any child, and too often present for some time before being rectified. It is sometimes the unsuspected cause of dullness, or lack of concentration, and hence of backwardness in school work. The reports of the frequency of deafness in different cities vary considerably. It runs from 5% to 10% or slightly higher. Complete deafness is usually congenital; partial deafness is practically always acquired. The most frequent cause is undoubtedly adenoid growth. Otitis media or middle ear disease, due to influenza, scarlet fever, diphtheria, or measles, is possibly the next most

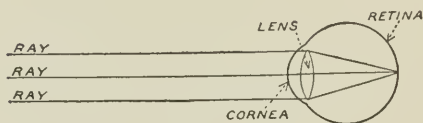
frequent cause. It is sometimes caused by obstruction of the auditory canal by wax, or a foreign body. A nurse who finds a child with a discharging ear, should never rest satisfied until the condition is cleared up. A watch is commonly used for testing hearing. Do not let the child turn his head to see where the watch is. The nurse should stand behind the child and gradually bring the watch from the side towards the ear. The other ear should be closed by some absorbent cotton. This test cannot always be relied upon, because the child has to inform you when the ticking of the watch is audible. A simpler and more reliable test is the whispered voice. Have a child stand ten or fifteen feet from your side, with the ear to be tested towards you and the other closed with some absorbent cotton. Whisper words or numbers and ask the child to repeat them immediately after you. Test the other ear in a similar way. If there is a history of a discharging ear for some time, a time test of sound conduction through the auditory canal, and of bone conduction of sound should be made with a tuning-fork. For bone conduction of sound, the fork should be placed on the mastoid bone. If the fork is placed on the frontal bone the vibrations are heard more distinctly in the defective ear.

DEFECTIVE VISION

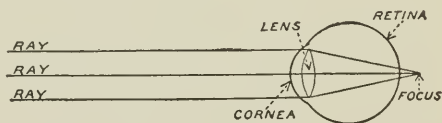
Defective vision, like a discharging ear, is strangely neglected by parents. Whether the gravity of the condition is underestimated or whether parents feel helpless in the circumstances is difficult to ascertain. There is a wide variation in the statements of the frequency of defective vision, because reports are based upon different standards. Some cities report as low as from 5% to 20% while others report as high as 75%. To obtain uniformity some arbitrary standard must be selected. Testing vision is usually done with the Snellin test cards. If a child stands at 6 meters or 20 ft. from the card and can read the type for that distance, vision is marked 6/6 or 20/20 which means normal. If he can read only the type for 18 meters or 60 ft., vision is marked 6/18 or 20/60. This is bad vision. Of course, vision may be worse than this. The frequency of "bad vision" is conservatively estimated at 10%; that is to say, one child in every ten is handicapped in his school work by poor eyesight.

The following diagram shows rays of light reaching the retina of the eye in a normal way, that is coming to a focus on the retina. This is called emmetropia or normal sight.

But sometimes the rays do not come to a focus on the retina but at a point behind it as in the



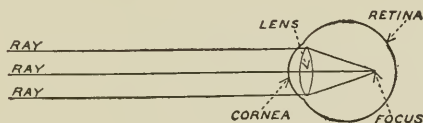
following diagram. This is called hypermetropia or long sight.



The image of the object on the retina would therefore be indistinct as the rays of light do not reach it at the same point. This is a common defect found in young children; in fact, young children are generally somewhat long-sighted because of the shape of the eyeball which is not yet fully developed; of course, as development proceeds, there is a natural tendency to spontaneous cure. But this is not always true, and treatment may be needed to relieve the condition. Hypermetropia is the commonest defect of sight in young children.

But rays of light may come to a focus in front of the retina instead of on it or behind it, as in

the following diagram. This is called myopia or short sight and is much more common in older children. Its tendency is to get worse instead of better unless relieved by treatment.



There is another defect of vision called astigmatism: this is caused by an irregular curvature of the cornea, or front of the eyeball where the rays of light enter. This irregular or uneven curvature of the cornea causes the rays of light passing into the eye to form several foci, so that, of course, the image on the retina is blurred. Astigmatism is usually the cause of headache due to eye strain.

Strabismus or squint is all too common in children. It may be congenital but is more often acquired. It is exceedingly unfortunate that parents look upon squint as more a defect of beauty than of sight. Yet there is generally defective sight in the squinting eye, which may be slight or almost complete blindness. There is a tendency for the condition to become worse without treatment. It may be caused by disease, such as diphtheria or by malnutrition or by general debility.

Defective sight is very frequently increased by bad school conditions, causing eye strain. It may be due to the unhygienic conditions of home and school causing general debility, or to improper lighting in the classroom, or a shiny blackboard, light from the wrong direction, or the same condition produced by a faulty position of the child, or to a strong light directly into the eyes, so often found in kindergarten classes, or to insufficient or artificial light.

A school nurse should always be a keen observer of the lighting of the classroom. The nurse should make the Snellin tests for vision. She is much more likely to make the tests accurately than the school physician, because she has more time, she has a greater personal interest in the child and parents, and the children are less nervous under her examination. To see that the child is standing at the right distance (20 ft.; too often this is guessed), to see that each eye is tested separately, and that the child uses a card to cover the other eye, instead of pressing the hand upon it, and thus dimming the vision for the test of that eye next.

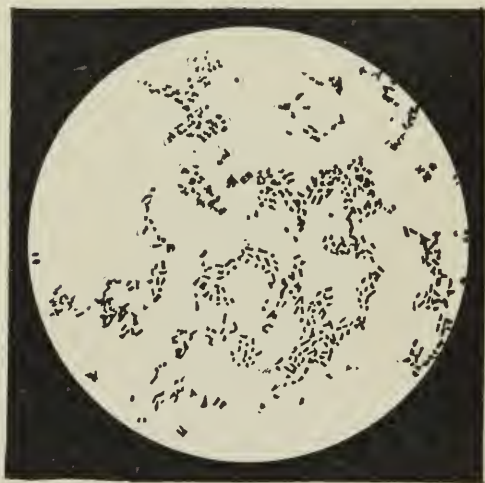
CHAPTER XIII

DENTAL CARIES AND PROPHYLAXIS

DENTAL caries is a disease as old as the human race, extremely common and widespread. Too frequently it is not considered a disease, and yet it causes more pain, ill-health, and broken constitutions than any other known enemy of man. It is considered that as high as 90% of school children are afflicted with this disease, which although it does not quickly kill, leaves its little victims with indigestion, intestinal infection, constipation, broken constitutions, marred and irregular features, and a prey to measles, scarlet fever, diphtheria, rheumatism, joint diseases, anæmia, malnutrition, and tuberculosis.

Dental caries is caused by a micro-organism or bacteria found in the mouth. The mouth affords ideal conditions for the growth of germs of disease, for these germs must have warmth, moisture, and food in order to live. Where the teeth are not frequently and carefully cleaned, the crevices

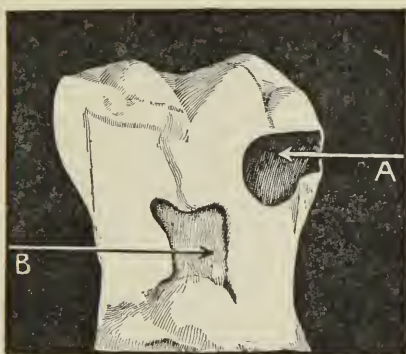
between the teeth become filled with food, and here these bacteria find cosy quarters in which to thrive and multiply, and soon a myriad army is busily engaged in its work of destruction. These bacteria in their development attach themselves to the sides



Germes of tooth decay.
(Magnified 1,000 times)

of the teeth, and protect themselves by a gelatinous material which they secrete and which securely attaches them to the teeth. These marauders have another secretion called lactic acid which is their weapon of destruction. This acid, which is particularly destructive when newly formed, attacks the lime salts of the tooth. The enamel is

largely composed of these lime salts and so a hole is soon formed. Here the bacteria quickly establish themselves, keep their lactic acid factories busy, and more rapidly proceed with the work of destruction, because the dentine or inner structure



Molar tooth showing the progress of decay toward the pulp (nerve).

A. Cavity of decay.

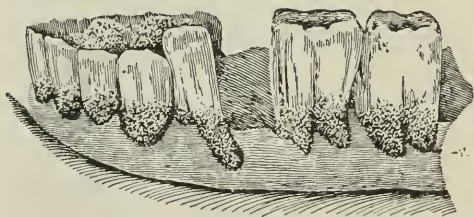
B. Pulp.

of the tooth is softer than the enamel and more easily destroyed by the bacterial lactic acid. No attention is paid to these enemies because no pain is felt until destruction has almost reached the central pulp, commonly called the nerve. Tooth-ache now gives warning of the presence of enemies, but alas! much destruction has occurred. If the disease proceeds, the central pulp is soon destroyed,

abscess formation follows, and pus pours out into the mouth, and thence into the stomach.

SALIVARY CALCULUS OR "TARTAR"

Teeth may be thus lost by decay but people who escape this decay are not infrequently victims



Showing tartar on the teeth, resulting in a recession of the gums and the ultimate loss of the tooth.

of other fairly serious conditions of the teeth. Their teeth may become loose and drop out. This loosening is due to a deposit of salivary calculus or lime deposits from the saliva, on the teeth at the edge of the gums, which deposit gradually encroaches on the area beneath the gum, and so separates the gum from the tooth. In this way the gum gradually recedes leaving the tooth more and more exposed. This deposit may successively involve further portions of the tooth until it reaches the roots. Its progress is gradual and without pain. As the gum recedes the nourishment of the

tooth is cut off, the tooth loosens, becomes a little sore to pressure, and soon drops out.

PYORRHŒA ALVEOLARIS

This is a disease of the periodontial tissue or tissues immediately surrounding the tooth. Literally pyorrhœa alveolaris means a discharge of pus from the alveolus or tooth socket. It is essentially a chronic inflammatory condition, attended by congested, spongy, and swollen gums and mucous membrane, accompanied by a persistent flow of pus from the sockets. The causes of this condition are local and constitutional. The specific cause is supposed to be a particular micro-organism but this has not been definitely isolated. Other local conditions contribute to the development of the disease, such as irritation to the gums, due to improperly fitted bridge, cusps, dentures, or mal-occlusion of natural cusps, fillings or crowns, or the too frequent use of wooden or quill tooth-picks. Uncleanliness of the teeth is naturally a predisposing cause. The most constant diagnostic symptom in pyorrhœa alveolaris is the swelling of the gums. On squeezing the gums pus will exude. If this swelling is hard and firm, the gum tissue will be a light lilac to purplish color. If the swelling is soft and puffy, the gums bleed with the

slightest irritation and pus is more abundant. While there may be cases of pyorrhœa alveolaris seemingly without deposit of salivary calculus or "tartar," such cases are rare. Usually there are some minute particles of salivary calculus present. As the disease proceeds, the gums recede from the roots of the tooth, yet unfortunately the gums are the least affected structure. The greater destruction is to the pericementum and alveolus, or true bone of the root and socket. There is molecular disintegration or alveolar caries, a kind of bony liquefaction and finally the teeth lose their attachment and fall out. In this process of disintegration pus pockets and alveolar abscesses form in the sockets.

ERUPTION OF TEETH

Light, air, water, and food are the great requisites to human life. The first three are supplied freely by nature and can be used as supplied by her. Food for the baby is liquid and so can be taken as nature supplies it. But as the baby grows and develops it requires other food, and develops teeth to prepare food for digestion and assimilation. Premature, bottle-fed, or rickety children teeth very early or very late and the teeth usually appear singly. Normal children, however, usually teeth in pairs and not singly. The first two to appear



SCHOOL DENTAL CLINIC

At 1	year	a child	should	have	6	teeth
"	1½	years	"	"	"	"
"	2	"	"	"	"	"
"	2½	"	"	"	"	"

SECOND OR PERMANENT TEETH

The first teeth of the second or permanent set are the first molars, which appear at about six years of age; hence are often called the "six-year molars." These appear behind the second molars of the first set. Count the teeth from the central incisor back and, if you can count six teeth on either side, above or below, you will know a six-year molar is present. Very frequently these six-year molars are mistaken for teeth of the first set and are allowed to decay; this is a permanent and irretrievable loss. The order of the appearance of the rest of the permanent set is the same as the first set, only the first and second molars of the first set are called bicuspidis in the second set. If we mark the six-year molars a b c d we have the same numbering for the next twenty teeth as in the first set. The complete second set contains thirty-two teeth. The order of their appearance can be graphically represented thus:

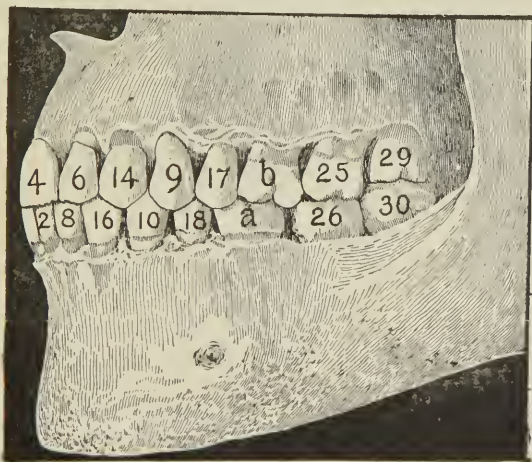
UPPER	31	27	d	19	11	13	5	3	4	6	14	9	17	b	25	29	JAW
LOWER	32	28	c	20	12	15	7	1	2	8	16	10	18	a	26	30	JAW

Therefore the order of eruption of the second set

is, the first molars (a b c d), the lower central incisors (1 and 2), the upper incisors, central and lateral (3 and 4, 5 and 6), lower lateral incisors (7 and 8), first bicuspid (9 and 10, 11 and 12), the cuspids or canines (13 and 14, 15 and 16), the second bicuspid (17 and 18, 19 and 20), the second molars (25 and 26, 27 and 28), and lastly the third molars or wisdom teeth (29 and 30, 31 and 32).

Some authorities claim that the second bicuspid usually erupts before the cuspids.

The cut below shows the left upper and lower jaw, and the order of the eruption of the permanent teeth is indicated by the numbering. Corresponding teeth on the right lower and upper jaw are numbered in a similar way.



The permanent teeth should be all present by the twelfth to the fourteenth year, with the exception of the wisdom teeth or the third molars which appear from the 18th to the 21st year.

FOOD & TOOTH DECAY

FOODS WHICH ARE CLEANSING & PREVENT DECAY

FIBROUS FOODS GENERALLY

EXAMPLES:

Fish, Meat, Poultry, Lettuce, Cress, Radish, Celery, Uncooked Vegetables (Cooked Vegetables are as a rule cleansing but in less degree than the uncooked).
Stale Bread with Crust, Twice Baked and Toasted Bread of all kinds, Savouries, Fresh Fruits, Fatty Foods of all kinds, Soups, &c.

COARSE AND FIBROUS FOOD IS A

NATURAL TOOTHBRUSH!

ORAL HYGIENE AND PROPHYLAXIS

How shall we care for these teeth nature has taken such care to provide us with, to prepare our food for our use? In primitive life all food was solid, and the teeth had to be used vigorously in

chewing it. This use of the teeth on hard food not only develops and strengthens the teeth as hard work develops and strengthens muscles but also preserves them by keeping them clean. Both

FOOD & TOOTH DECAY

FOODS WHICH ARE **NOT CLEANSING & PRODUCE DECAY**

STARCHY AND SUGARY FOODS
WITHOUT FIBROUS ELEMENT.

EXAMPLES:

Sweet Biscuits & Cake, Bread & Marmalade,
Bread & Jam, New Bread without Crust,
Bread soaked in Milk, Milk Puddings,
Porridge & Milk, Stewed Fruit, Honey &
Sweets of all kinds, Cocoa & Chocolate.

WHEN THE ABOVE ARE EATEN

CLEANSING FOODS SHOULD FOLLOW!

temporary and secondary teeth need daily exercise on solid food, but modern people have become dainty (or shall we say indolent) in their diet habits, and we have much "prepared" food, soft food, brews, puddings, cakes, and so-called "slop" food; this kind of food is easily and quickly gulped

down. This soft food remains in the crevices between the teeth, decays, and as previously pointed out becomes the breeding ground of bacteria. Therefore, this food debris should be daily and thoroughly removed; the teeth should be brushed at least first thing in the morning and the last thing at night and preferably after each meal.



The child must be taught how to use a toothbrush. The motion of the brush should be downward on the upper and upward on the lower teeth, both on the outer and inner surfaces. Brushing from side to side which is the common method of cleansing the teeth does not clean out the crevices between the teeth. The bristles of the brush should be moderately stiff, short, and in serrated tufts. If the bristles are soft they will fail to get into the crevices, and if very stiff they injure the gums. Use plenty of warm (if possible) water and a good tooth paste or a soft tooth powder once a day. Never use soaps, acids, or a gritty dentifrice. This cut shows a brush suitable for a child:

This cut shows a suitable brush for an adult:

Most tooth-brushes on the market are monstrosities and oral abominations. They are far too large and so bushy that it is impossible to keep the brush clean. Much has been said lately of the harmful effect of the unclean tooth-brush. Of course, the tooth-brush should be washed immediately after use, preferably by running hot water, but it is not necessary to put it in a strong disinfectant nor boil it. This would very quickly destroy the brush. The micro-organisms that are found on the tooth-brush are the ones found in the user's mouth and are practically always present. In fact we become to a great extent at least immune to our own micro-organisms. But we may become seriously infected by the *same* micro-organisms coming from another person's mouth. There are many other reasons for having your own individual tooth-brush. If children are not watched they will soon allow their tooth-brushes to become clogged with tooth paste and food debris, which like every other dirty habit is very reprehensible.



As stated under pyorrhœa alveolaris healthy gums are vitally important to the preservation of the teeth; therefore, do not injure the gums with pins, toothpicks, or gritty tooth powder. Perhaps it should not be necessary to say that chewing gum or tobacco does not keep teeth clean. Do not give a child candy every day and *never* give it just before bedtime, or before breakfast. In fact candy should only be given after meals, preferably after the noon meal. Lastly, teeth should be periodically examined by the dentist at least once every three months for a child and twice a year for an adult. This leads to the discovery of decay or the deposit of tartar. Regular polishing by the dentist is necessary to keep the teeth free from such deposits, which in many mouths form very rapidly. Absolutely clean teeth do not decay.

TOOTH-BRUSH DRILL

See this described under "forest school."

Where proper facilities cannot be obtained in the school for carrying out tooth-brush drills the nurse may occasionally have the children bring their brushes for inspection, and also to demonstrate in the classroom the proper motions in the use of the brush.



TOOTH-BRUSH DRILL—FOREST SCHOOL. TORONTO, CANADA

SCHOOL DENTAL CLINICS

In the beginning school dentistry was regarded with a great deal of distrust and hostility. There was the usual talk of pauperizing the people, interference with personal liberty, and paternalism. Even the most thoughtful and courageous supporters of the State's duties to children looked upon dental treatment for all school children as visionary and impracticable. Now school dental clinics receive practically universal commendation. The popular magazines, weeklies, and the daily press unite in supporting free dental clinics in the public schools. School dental clinics are the solution of the care of children's teeth, and it will not be long ere it is recognized that any fairly large school is incomplete without a dental chair. The policy should be to do dental work free up to fourteen years of age, when nearly all the second set of teeth are completely erupted. The place for the dental chair is in the school building. If the medical inspection room is large enough, it can be installed there. The school having the dental chair becomes the clinic for two, three, or more near-by schools. Such a local clinic has many advantages over a large central clinic, and has only one drawback, namely, that major work

requiring an anæsthetic cannot be done; or at least should not be done during school hours. The school is the child's second home where he knows everyone; he soon becomes familiar with the chair, and looks upon having his teeth filled and cared for as a necessary part of school work. Moreover, a systematic dental examination of a classroom of children about the same age, in order to obtain complete dental statistics of oral conditions, can be done only in the school building. There is easier and more efficient coöperation between the school and the home. The child is also under school discipline and the habit of obedience, so that the school dentist is not interrupted and delayed in his work by excessive fear, cowardice, fussiness, or the misplaced sympathy of nervous parents. There are no broken appointments, no difficulties about transportation, and the children are under the immediate eye of the school principal, teacher and nurse. Much better attention, therefore, is given to instruction in preventive measures. The cost of transportation, the time of mother or school nurse and of the child in reaching a central clinic, and the lack of control of the child and of its appointments are almost insuperable difficulties. The status of such an institution as the Forsythe Dental Institution, Boston, which

undertakes all major, teaching, nose and throat, orthodontial, X-ray, and research work, is different.

In country districts dental chairs could be established in one, two, or three schools in a county, to which all would have to go for certain dental work. But the distance to travel should not usually be more than five miles. For more remote places the dentist should have a portable dental equipment and travel by motor car. These remote schools could be visited twice a year. The order of procedure in treatment in school dental clinics is pain, pus conditions, vital teeth with exposure of pulps, putrescent conditions, minor cavities, and extraction of hopelessly decayed teeth and roots. School dental clinics have been long enough in operation to show that the time the child loses from the classroom in obtaining dental treatment is far more than compensated for by its increased efficiency.

PRESERVATION OF TEETH IMPORTANT

Good teeth are necessary to proper mastication of food, which is the first part of digestion. Food should be masticated to a creamy consistency and thoroughly mixed with the saliva before being swallowed. If food is swallowed in a lumpy condition, the stomach is unable to do its work, and

the unwholesome mass is passed into the intestine where good absorption is impossible. Nourishment is not attained for the body, and the intestinal tract is inflamed; it may be months or years before chronic indigestion results, and then a thousand ills follow in its wake. When a tooth is lost, the grinding surface is impaired. The same occurs when the jaws are improperly developed and the teeth are consequently irregular.

Preservation of the teeth depends far more upon the cleanliness of them than upon any inherited quality of the teeth themselves. It is the duty of parents to watch the teeth of their children quite as carefully as they do their general health. When teeth decay, not only are the teeth gradually lost, but pus pours into the mouth, the gums become chronically inflamed and sore, while pus and debris mix with the food, further interfere with digestion, and slowly poison the body. It is commonly considered that the temporary teeth are not worth filling or caring for; this attitude of mind is almost universal, yet it is one of the greatest follies. It costs much more to allow them to decay and poison the child's mouth, undermine his health, destroy his beauty, upset his digestion, and leave him a prey to insidious diseases. This tooth decay or oral sepsis has a distinct relationship to

many diseases and more especially to what is known as children's diseases.

During the physiological resorption of the roots of the temporary teeth (while these are being "lost") there are always open apices of roots in the mouth of a child. When caries reaches the pulp, there is, therefore, a direct opening from the mouth to the tissues at the apices of the roots—open avenues of infection. In the mouths of the majority of children, therefore, we have conditions not found at any other period of their lives—dirty, decaying teeth, a foul inflamed mouth, with pus and debris, and open avenues of infection leading to the deeper tissues. It is at this period of the child's life that it is subject to mumps, chickenpox, whooping-cough, measles, scarlet fever, diphtheria and frequently to anæmia, tonsillitis, pneumonia, and rheumatism. Too frequently this last is called "growing pains." A striking demonstration of the truth that children whose teeth are clean and preserved and mouths healthy are practically free from these infectious diseases of childhood, has been given by St. Vincent's Orphanage, Boston. Careful attention has been given to the teeth and mouth of all children since April, 1911, with the result that these diseases have been practically unknown during that time.

And these diseases in the past have been the scourge of such institutions the world over.

It is not possible for children to thrive with decayed teeth even if they do receive wholesome food. As a matter of fact, however, they are fed on "slop" foods and sweets, because of the pain and tenderness, or the absence of a decent masticating surface, and this but aggravates the conditions. It is only of recent years that the medical and dental professions have recognized to the full the importance of the condition of the teeth on the health. The early loss of teeth is sure to produce some serious disability. No single ailment of children is responsible, directly or indirectly, for more feeble constitutions, tuberculous disease, deformity, enlarged glands and tonsils, adenoids, and mental dullness, than dental caries. Not only is the health maintained by preservation of the teeth but much better school progress follows. Non-promotion is largely due, directly or indirectly, to neglected septic and decaying teeth. Mental concentration upon school studies is impossible with toothache. A much greater number are rendered inefficient at study from discomfort and indefinable aching due to the septic condition of their mouths.

Suitable literature, fully explaining the neces-

sity for preserving both the temporary and secondary teeth, and how this is best accomplished, should be given to all school children. The School Board should authorize every principal to see that a child, when entering school, has a suitable tooth-brush and dentifrice, and to see that the parents enforce its daily use. If the child has badly decayed teeth and a septic mouth he should not be allowed to enter school until his parents have had the mouth conditions remedied. If there is a school dental clinic, there is no difficulty in obtaining the necessary treatment. If there is not, there should be some other means for obtaining free dental treatment for the children of the poor.

Good teeth are a business asset. They maintain the health, improve the appearance, promote intelligence, increase efficiency, raise self-respect, and make either a boy or a girl acceptable to the employer. To-day managers of large departmental stores and manufacturing plants, find it economical to establish dental clinics upon their premises for the use of their employees.

CHAPTER XIV

THE SCHOOL NURSE

MANY nurses think they should be allowed to follow their own tastes in the matter of dress, especially when they are engaged in school nursing. In this field of labor, as in all others, the personal attire should be fitting and adapt itself to the work. A little consideration of the subject should convince any nurse, even a capable nurse, that her dress may mean success or failure as a school nurse. The nurse who goes into the school and homes of the poor dressed in a low-neck silk waist, fashionable skirt, silk stockings and high-heeled boots will only antagonize, when she may genuinely wish to assist. She should realize that such an attire is out of place in this work. On the other hand, the dowdy nurse with bedraggled skirts, untidy hair, and holes in her gloves is no inspiration to personal neatness and cleanliness in others. Any nurse while on duty should be dressed neatly and smartly

but plainly. The school nurse should be immaculate in uniform. She should wear a washable shirtwaist and a white one-piece apron. Her hair should be tidy, her nails well trimmed and clean, and her teeth white and in perfect condition. The nurse who fails to observe these things wastes half of her energy, because she is trying to impress in words what she fails to carry out in practice. She should remember that her living example is more effective teaching than oft-repeated precepts discredited by her own practice.

The qualifications required by the ideal school nurse are many. A complete and thorough technical training, preferably in a children's hospital, is the necessary foundation for the superstructure of the additional training required to fit a nurse for the school service. It is important that her technical training includes experience in children's wards for skin diseases, and diseases of nose, throat, eye, and ear. A school nurse is constantly being called upon to decide whether a child should be specially examined for conditions of eye, ear, nose, throat, and skin. But the nurse who has just graduated from the best of hospitals is not yet fitted for school nursing. She needs experience before she undertakes the greater responsibility of school nursing. She should have two

years' experience in private practice and six months in district nursing. Her training in district nursing will be her final preparation for beginning her training in school nursing, when she should spend six months under another nurse before being placed in full charge of schools. Nurses who desire to fit themselves for school nursing will find a specially adapted course at Teachers College, Columbia University, New York City, under the direction of Miss M. A. Nutting and Miss A. Goodrich and should avail themselves of this excellent opportunity.

But the duties of a school nurse call for something more than thorough training, ability, keen observation, good sense, and sound judgment. Much more is required of the young woman who is going to make a successful school nurse. Consciously or unconsciously she becomes the child's ideal. A school nurse without ideals may be a curse instead of a blessing. She should have the highest ideals and a sensitive vision of her influence on the impressionable, developing child; a love of achievement, initiative, honor, mercy, and truth should be the very breath of her existence. Her character must be blameless. She must be naturally kind, for children are quick to recognize this quality in their elders. This child-love



HOME VISITING

must be more than mere sentiment. Above all other things the school nurse must have a deep, human love for children, a charity and kindness that embraces all children in its sympathy, the dull and the bright, the dirty and the clean, the sulky and the cheerful, the repulsive and the attractive, the insolent and the obedient, the quarrelsome and the loving, the rebel and the follower and admirer. She must gain the confidence of all by gentleness, affability, wonderful patience and persistence, by a missionary love for the child, and a great vision of saving childhood from suffering and disease. Her disposition should be cheerful but earnest, bright but not frivolous, with a sincerity and good sense not easily disgusted by crudeness. She must have a natural courtesy that is her own protection and an ever present help in all difficulties, intuitive tact, infinite patience, a supremely optimistic spirit and an ever living, ever present vision of the long-looked-for Utopia of universal child-care. She must have a large measure of the spirit of the Master who went about doing good. She must have tenacity of purpose, for nothing must stand in the way when a child is in need.

It is easy to throw the burden of nothing accomplished upon the shoulders of others. The

unperformed duty of another is not a sufficient answer when a child's handicap has not been removed, if it is humanly possible to do so. The human interest in her work will never let her forget the needs of the child. The school nurse's smile should be sunshine to many weary and lonely little hearts of neglected children. This is not the perfunctory morning smile of duty, but the bright, glad, warm, sympathetic smile of the real personal friend, who is interested and anxious to know how the world goes with him.

The lazy, untidy nurse is not much use anywhere, but she is an ugly blot on the sun of child life in the school nursing service. The school nurse must appeal by example as well as precept.

The practical aims of school nursing are the basic principles of Preventive Medicine and the school nurse must take into consideration the home environment and home training or lack of it, when dealing with children. She will need unlimited tact and diplomacy, not only in dealing with the children, but more especially in her relations to the many and various types of parents she will meet. She must know how and when to be firm and insistent, in a kindly way, with some parents and to be sympathetic and affable with others. If she obtains the confidence of the family, she

will learn of many difficulties that would otherwise be concealed. She will be called upon to adjust these difficulties or find a solution for them before the family life can be happily settled. When she finds a tuberculous child or parent in a home, she should know at once what agency will care for him. If the house drainage is defective or premises unsanitary she should never rest until she gets the Board of Health to compel the landlord to remedy these conditions. If she finds a father out of work or too lazy or dissipated to work, and a twelve-year-old boy the support of the family, she should be able to set the machinery in motion that will obtain work for the father or compel him to work and return the boy to school to obtain his education. If she finds a family destitute she must know what relief society will see to the immediate needs; she must know that simple charity given to relieve pressing wants is not the end of an acute situation; she must learn to search for the underlying causes for such distressing conditions so that a permanent remedy may be found. *This is where so many nurses fail.*

On the other hand, the school nurse must know that parents have responsibilities towards their children, and that no one else can or should under-

take these responsibilities. It may not be easy to gain the confidence of parents, and the school nurse may have to patiently bear many indignities heaped upon her, but if she gains her point, and the child is cared for these things do not matter. Present concrete examples of children known to them, if possible, where cripples might have been saved from their deformity. Let the school nurse be inspired by the thought that to turn fierce opponents to true friends is accomplished only by the truly great. Do not speak carelessly of father or mother or home before or to the child, under any circumstances. It takes a big-hearted, broad-minded nurse to see these things in their true perspective, to see the things that really count, and it is fortunate indeed that this capacity may be more or less acquired, by living in touch with the hearts of the people. She must have a broad outlook, she must know human nature, and have social instincts well-developed, so that she will not only take her place in the school community, but also know the needs of others in different walks of life, and help them to understand the meaning of independence and self-respect.

The school nurse must be able to coöperate in the heartiest way with school teachers, the family

physician, and the Board of Health. It is hardly necessary to say that to obtain efficient work there must also be the heartiest coöperation between the school nurse and the school medical inspector and dentist. But the nurse has her own definite work to do on schedule time, and there should be no tendency to look upon the nurse as a mere helper of the medical inspector or dentist. The nurse has her own part to do and in the ordinary school work both the physician and dentist can get along just as rapidly without her, if she has her work well in hand and systematically arranged in coöperation with the physician and dentist. Where logic and system is put into that coöperation, little time is lost by the medical inspector or dentist by having to wait on himself. There will, of course, be occasions where it is necessary for the nurse to be present and assist, but she should never forget she has her own schedule to carry out. She must study how to meet the family physician when he resents "interference"; such resentment is generally founded on statements carried to him by the parents and which have in all probability been conjured up by the active imagination of the child on his way home from school. The school nurse should rank as the principal's consultant in the physical welfare of

the children, and everything pertaining to the child's health and well-being should be discussed with her, if we are to have the ideal organization and the best results. She knows the home conditions and environment better than any one else; she knows the personal and home habits of the child and the things that tend to lower his ideals and corrupt his morals. It is acknowledged by those familiar with school health work that the school nurse performs the most important part in the work of medical inspection of school children. She is the one who "obtains results," and that is what makes the work successful. She discovers incipient cases of infectious disease and guards the school from epidemics; she relieves minor ailments, obtains boots or clothes and thus keeps the children at school; she brings comfort and relief to many a stricken home where there are sick children and an over-tired mother. By her advice and direction and assistance she has brought order out of untidiness and uncleanness and reviving hope out of discouragement. The school nurse has splendid opportunities for practical social service in the homes she visits. To keep a family together, to keep a home intact is an achievement which cannot be paid for in money. This is what the successful school nurse is doing

constantly. She becomes the friend of the whole school community and familiar with the home conditions of every child. She becomes the link connecting the home and the school and the instructor not only of the pupils, but also of the parents and the teachers, in the principles and practices of sane hygiene and the laws of health. The school nurse is essential to the follow-up work, and it is only by systematic follow-up work that results are obtained. It is not the scientific diagnosis nor the careful physical examination that makes medical inspection of schools a blessing to children, but the remedy that is procured, and the credit of this must go to the school nurse.

But the aim of the school nurse to-day is prevention rather than cure. Cures must be effected to bring about normal conditions, but the aim is "to keep the body in such a condition that disease cannot assail it." When the school nurse has taught the children that a healthy body and a sound mind are his greatest assets, her work will have given our educational system an inestimable force. The school nurse who fails to get things done is a failure and should take up some other branch of the profession. There is no place in school nursing for the nurse who must be taken

around by the hand and have her work pointed out to her.

There are so many things in the life of a school-child that have an important and intimate relation to his health and development that the field of labor of a school nurse is a wide one. These things have an important bearing upon his mental and moral development as well as his physical, upon his school progress, his general efficiency, and his ability to assume his civic and national duties and responsibilities. A school nurse is not a trustee, nor a physician, nor a dentist, nor a principal, nor an architect, nor a physical director, but she should know some things that come under the authority of each, because *these* things have an important relation to the welfare of the children, for whom she should be considered in a very special way, *in loco parentis*.

She is not consulted in the choice of a school site, nor about the lighting, heating, ventilation, seating or sanitary accommodations, nor about the amount of floor space allotted to each child, nor about cloakrooms, playgrounds, basements, games, nor physical drill, nor about the size of a school, or the number of children in a schoolroom, yet all these things are extremely important to the health and development of the children under



THE PROPER TOOTH-BRUSH

her care, so she should know what is best that she may be able to point out what is detrimental. Many things that are harmful to children are allowed to continue because of oversight, neglect, carelessness, ignorance, or the soothing narcosis of custom. A live and diplomatic school nurse will get somebody interested who has power to produce a change, and she will heroically hide her own agency and efficiency behind the powers that be for the good of the child.

The school should be situated on elevated land and preferably the soil should be gravel or sand. If possible, the school should be in an open space with ample playgrounds and away from noise, smoke, and dust. It is difficult to understand the view of the school trustee who thinks a quarter of an acre ample playground space. Any school should have from four to six acres, and a portion should be devoted to flowerbeds and shrubs. No school should have a larger attendance than six hundred pupils. In larger schools, the difficulty of securing good hygienic conditions in the classrooms are greatly increased, and the principal loses his personal touch with the children. Every classroom should be bright and modestly decorated with a few simply framed prints of classical pictures. There should be no bright colors.

The woodwork, walls, and floors should be of such a nature that they are easily kept clean. The floor space per child should be from fourteen to eighteen square feet and an average of thirty-five pupils is enough for any teacher. Crowded rooms with from forty-five to fifty children always make health conditions bad, besides impairing the efficiency of the teacher. Natural ventilation of the classroom by the windows is always necessary; even if there is a mechanical system of ventilation, such as the gravity or fan system, in use, the windows should be opened several times during the morning and afternoon session and recess. In this way natural air movement and humidity is obtained. The time that windows are open will have to be regulated by weather conditions. In the winter many small rural schools use "storm windows." These should never be used on any school. The temperature of the classroom is better at sixty degrees with occasional physical exercises; it should never be higher than sixty-four. If any one needs extra clothing it is likely to be the teacher, because of a longer life of unhygienic living, or some poor kiddie who has been mollycoddled into a weak, anæmic creature, destined to the same fate as the teacher. A temperature of seventy degrees is an outrage on child

life. If the heating is by hot water there should be a galvanized iron screen three or four inches from each radiator, between it and the child seated near it. Light should come from the left; blind rolls should be movable so that they may be lowered or raised as required. In this way the upper part of the window can be opened for purposes of ventilation, without injury to the blind, or the disturbing effect of its continual flapping. Blackboards should not be shiny, as this has a very injurious effect upon the eyes. It is rather a common occurrence to find the smaller children in the north rooms and the larger children in the sunny south rooms. The smaller the child the more he needs plenty of sunshine, and the small children should be in the southern rooms. In kindergarten rooms children sit on both sides of the table and it is very common to find a row of children with the sunlight striking directly into their eyes, because of the arrangement of the classes in the room; this should never occur. Desks should be single and movable; cloakrooms should be separate from the classrooms. Economy is no excuse for making a cloakroom behind a blackboard screen. Drinking water should be easily accessible, and every child should have his own sanitary cup. There are very serviceable

and cheap sanitary cups now on the market. Where there is a water system there should be a drinking fountain in every corridor.

Lavatory accommodation should be ample. Where the outdoor toilet is used in rural schools, it should be kept clean, in proper repair, and well supplied with toilet paper. In the summer its windows, door, and pit should be protected by good netting, so that it will be impossible for flies to reach the toilet. There should be one toilet for every ten girls, and one for every fifteen boys. In cities and towns having a sewage system and toilets in the school, there should be half-doors on all toilets, no woodwork about the stool, push-button flush, and plenty of toilet paper. Exposed toilets savor of medieval barbarism, and members of School Boards should hang their heads in shame that they still exist in this country. Lavatory accommodation should be on every floor, except the first which has its accommodation in the basement. Every school should have paper towels, liquid soap and containers, and water for washing hands and face. In city schools with the water system there should be shower baths and swimming tanks.

The school nurse should also be familiar with standard heights and weights and the relation of

height and weight to nutrition. A child may be small, but height and weight and nutrition may be normal; the framework must be considered. There should be progressive increase in stature and weight. Children of fine bones and slender body may have a delicate transparent skin without being anæmic. Every healthy child should have a good appetite, be fond of play, and sleep well. Any abnormalities in a child's habits should be reported. It is well to note that there are two important periods of development in the child, namely, at about eight years and thirteen or fourteen years of age.

The human body is far from being a perfect mechanism, but that is only an additional reason why each one of us should endeavor to find out how best to care for our own. Too many people think that the only oil for the mechanism of the body is medicine, and that this should be sufficient no matter how they abuse the machine. Coughing, vomiting, and purging are only nature's way of defending the body against its enemies, or getting rid of things that interfere with the body's functions. Headache or pain is but nature's warning that there is something wrong, and is an insistent call for careful enquiry into habits, indulgences, or indiscretions that are impairing

the organs of the body, or a careful investigation into the presence of disease. A child's organism is easily upset but as a rule easily rights itself again. It is the frequent occurrence of this upsetting that finally produces ill-health and poor development. The essentials of personal hygiene, plenty of sunlight and fresh air, water, sleep, moderation in play, work, diet, and amusement must be observed to obtain normal development and good health. The young child is more susceptible to communicable disease than an adult but that does not mean that every child *must* have these diseases. They should be avoided if possible. Instead of being so prevalent these diseases could be wiped out of the land, if parents would only use a little common sense in dealing with them. It still seems difficult to get parents to grasp the truth that epidemics of communicable disease are caused by well people carrying the contagion from house to house, and thus spreading the infection. If the same horror existed for mumps, chickenpox, whooping-cough, and measles as is felt for smallpox, and the same efforts made to isolate all cases, these diseases would soon be as rare as smallpox. Even to-day there are medical men who still have our dear old granny's idea that we cannot respectably pass

through life without having mumps, chickenpox, whooping-cough, and measles. Thus children's lives are sacrificed to ignorance, prejudice, and neglect.

Most colds are not caught by exposure to cold and wet, but are caught in close, stuffy, sleeping-rooms, railway trains, moving-picture shows, music halls, theatres, churches, and schools. Pneumonia is rare in the arctic regions. Many breakdowns in later life are due to latent infection contracted in close, over-heated classrooms, or to an undermined constitution or physical defect wholly due to unhygienic conditions during school life. A school nurse must be continually on the alert for conditions that impair health, or for the evidence of the onset of disease. The following is an illustration of this alertness. A child returning to school after a few days' absence was noticed by the school nurse to speak with a nasal intonation that was unnatural. She immediately thought of post-diphtheric paralysis, and took the child to the medical inspector who took a swab of the nose and throat. The culture showed the presence of Klebs-Loeffler bacilli; two other children at home who were not known to be ill were found to have the bacilli in their throats. The father loudly declared that his

children were not ill, "they could eat three square meals a day," but this case was undoubtedly the beginning of eighty cases that developed in this school within a month.

The diseases considered in this volume are those commonly found in the schools. Only a short description is given to keep the school nurse on the lookout for the manifestations of disease. Where a nurse finds a child in ill health, with a history of tonsillitis, rheumatism, anæmia, chorea, or epilepsy, she should think of possible heart and kidney conditions and should see that these organs are examined. Where there is a story of poor health following bronchitis, pleurisy, broncho-pneumonia, pleuro-pneumonia, lobar-pneumonia, whooping-cough, or measles, she should think of the possible presence of pulmonary tuberculosis, and see that the lungs are carefully examined.

Where such special examinations are called for requiring the removal of clothing, they should be made in the presence of the mother preferably, the nurse, or teacher. The school nurse must always be alert and a keen observer of the condition of eyes, ears, nose, throat, teeth, and tongue. A foul, coated tongue indicates over eating, indigestion, or improper diet and constipation. She must be alive for evidence of rickets, malnutrition,

spinal curvature, Pott's disease, pulmonary or glandular tuberculosis, anæmia, or any state of depreciated health. She should make herself familiar with primary and secondary skin lesions because skin diseases are common among children. Scabies, ringworm, eczema, impetigo, and the rashes of communicable disease should be studied with special care. The primary skin lesions are macule, papule, nodule, wheal, tumor, vesicle, bulla, and pustule; the secondary lesions are scales, scabs, pigmentation, excoriations, ulcers, fissures, and scars. These skin lesions must be carefully considered with respect to locality, symmetry, and evolution.

THE LAWS OF HEALTH

Efforts to prevent the spread of disease must be actively supplemented by teaching the laws of health. When we speak of the laws of health, even teachers are apt to think that this is a very technical subject. The school nurse should, therefore, be able to present these laws in a simple but instructive way. For instance, most children will pretty readily give you an answer if you ask what we can do without the shortest time, and still live; very possibly you may be told "food"; give them a moment longer and you will get the answer

“air.” This then is the first law of health. We can live less than three minutes without air. This opens up the whole big subject of the tremendous effect on health of plenty of fresh air; the question of ventilation of home, bedroom, offices, churches, theatres, retail shops, workshops, industrial plants, and schools; of overcrowded rooms, overheated buildings, and overclothing; it must be pointed out that the value of the fresh air is not only in the amount of oxygen present but also in the natural amount of humidity and air movement. Air with a normal amount of humidity, and sufficient movement allows of the necessary removal of body heat, or body respiration, as it is sometimes called. Overheated, overcrowded, unventilated rooms, overclothing, or excessive humidity interfere with this necessary exchange of body heat. It has been clearly demonstrated that it is this interference with heat removal, chiefly through the skin, that produces the ill effects due to poor ventilation, and not the carbon dioxide content of expired air. This heat removal is purely a physical function of the air, and is quite distinct from the vital function of respiration depending on chemical changes carried on through the lungs. So that the change that unfits air for ventilation, not respiration, which unfits air for the aerial

envelope of the body, is a diminished capacity for taking up heat. School rooms should not be heated by hot air. To provide an adequate removal of body heat, the air supplied to classrooms must be cool and moving. Daily interference with this necessary removal of heat from the body produces sluggishness, superficial respiration, and marked deterioration of health. There is a very prevalent idea that night air is unhealthy, that a mysterious miasma floats in the night breezes, causing ill-health and sickness. This is mere superstition, for in cities, at least, the night air is purer, because there is less smoke and dust. There are many, too, who fear a draught more than they do evil, and an open window affects them like the fear of a plague. These people are a nuisance to the health of everyone that belongs to them, or who is unfortunate enough to live with them, or travel with them. These people in their folly are but preparing themselves by their cowardice for the affliction which they are thus vainly seeking to escape.

What next can you do without the shortest time and still live! You may again get the answer "food" and the correct answer may be slower in coming. More than likely, however, you will get the answer "water." You can live but a short

time without water, but you can go many days without food. Here it should be pointed out that many people do not drink enough water; that no child under sixteen should ever drink anything else but water and milk; that children cannot take the same things at the table as adults; that tea and coffee always have a markedly injurious effect on children. Water needs to be taken freely into the system as well as used freely on the outside of the body. This is the second law of health.

What next? You may fail to get the correct answer, as it is rare for a child to think that it needs sleep more than food, to live. Even very young children, however, will readily appreciate that they can go without sleep only a very short time without tremendous effects on the human body and mind. Here the value of regular hours of sleep, especially for children, should be emphasized; that all children under two years should be in bed not later than 6.30 P.M., those under nine by 7.30 P.M., and those under twelve by 8.30 P.M. Tea, coffee, and lack of sleep are making the present generation of American and Canadian children bundles of nerves. Plenty of sleep for the child is as important to his health as plenty of fresh air. Parents who are out to all hours of the night with babes in arms and young children are

but preparing for themselves and their children much pain and suffering and many sleepless nights. Sleep is refreshing and invigorating.

“ The innocent sleep;
Sleep that knits up the ravelled sleeve of care,
The death of each day's life, sore labour's bath,
Balm of hurt minds, great nature's second course,
Chief nourisher in life's feast.”

Macbeth.

Now, we can accept food as the next law of health. It is well to give a few words about the different kinds of food required by the human body. For the first year of life, milk contains about all that is required by the baby's body. By asking the children to name the principal kinds of food that we eat daily, you will readily obtain the names of vegetables, bread, meat, eggs, fish, and butter. The older pupils may be given the technical names for these different kinds of food, namely, that potatoes and other vegetables, and bread and sugar give us what is called carbohydrate food; meat, eggs, fish, proteid food; fat meat, and butter, fat food. Along with carbohydrates, proteids, and fats the body requires a certain amount of mineral salts. With the question of food must be taken up the necessity of its thorough

mastication. The first part of digestion takes place in the mouth, and food must be thoroughly mixed with the secretions of the mouth. This naturally brings up the question of good teeth, the care and preservation of teeth. Ask them how much their fathers will give for a horse without teeth or with poor teeth, and practically always, even city children, are ready with the answer. They all know that a horse without teeth is of no value. Point out to them that children with decaying, rotten teeth make useless men and women; that such children make the puny invalids of adult life, who are a burden to themselves and to others. Thorough mastication means food must be eaten slowly and not bolted. Bolted food often forms a hard bolus or lump in the stomach which cannot be digested, and, in fact, the stomach may have much difficulty in getting rid of it, and a great deal of trouble follows. Metabolism, or the digestion and assimilation of food, produces body heat and the power that is shown in activity and work. The production of this body heat is continuous, and was spoken of under air movement in ventilation. A great deal of emphasis should be placed upon the quantity of food required for the maintenance of health and strength. It is important to point out that the man doing hard physical



SPECIAL INSTRUCTION IN USE OF TOOTH-BRUSH. TORONTO, CANADA

labor needs more and stronger food than the one doing mental work; that when holidaying we should eat less than when at work. Practically every one ignores this, and takes Sunday for feast day, and wonder, remarkable though it may be, why they feel out of sorts on Monday. Practically all children whose parents can supply them with abundance of food, are given too much to eat; a few of the children of the poor suffer from the want of food, but more frequently they suffer because they do not get the right kind of food, or food improperly prepared and poorly cooked. Too many people, even well-educated people are obsessed by the idea that it is necessary to have a great variety of food. This is all wrong. No great divergence from the principal foods required for the proper nourishment of the body should be allowed. Within very narrow limits a little variety may be allowed.

Now, if you ask the children what a plant requires to keep it alive you will probably get another important law of health, for usually along with air, water, food (from the soil), you will be given light. Sunlight is a very important factor in the preservation of health. Of course, we can live quite a while without sunlight, but ere long the health breaks down. The sun provides health

as well as light, and without the sun's heat the world would soon perish. But light itself is important to health so we may call sunlight a law of health. These laws may be impressed on the child's mind in the following simple way. Place the words representing these laws in consecutive order and in the order of their importance, considering light to mean sunlight we have—*Light—Air—Water—Sleep—of Health*. The first letters of these four words spell "laws." This leaves out "food" but children (even adults) will always remember this law. This too, makes a striking illustration of where the food law should be considered, not first, nor second, nor third, nor fourth, but fifth.

There are other things requisite to health and strength. In some parts of the world, at least, we must have clothing to maintain the body heat and life. In our colder climates many children, and especially boys, keep too much clothing on them in school. In this connection the sweater coat has become an abomination. Our schools are nearly always too hot, and yet both boys and girls are allowed to keep their sweater coats on in the classroom. Frequently, too, rubbers and rubber-soled running or tennis shoes are kept on the feet all day, which is equally objectionable. The

next law is that of cleanliness—cleanliness of body as well as hands and face, of hair, and of clothes. On this matter, children must be talked to every day of their lives for many years. They must be daily examined and encouraged. It must be remembered that some may have very poor facilities for keeping clean, and without facilities it is no easy matter for adults to keep clean. Every school should have such facilities, not only for washing hands and face, but also for shower baths and swimming pools.

We may call artificial heat the next law. We have referred to this under ventilation. The great trouble in the schools of this country is that children get too much of it. Because an adult loves to indulge in a hot-air bath of seventy to seventy-two degrees, they persuade themselves that that is suitable for the child. These hot classrooms are the destroying demons of child-health. A teacher who keeps her classroom at seventy to seventy-two degrees should be arrested for homicidal tendencies. I do not need here to go into the different methods of artificial heating. The time may come, we hope soon, when we will have heated floor surfaces, and we will not be forced to breathe super-heated air which destroys health.

Two other things are necessary for the maintenance of health and strength, namely, bodily work, whether as physical exercises, walking, horseback-riding, or manual labor, and amusement. Children's amusements should be for the most part simple games, plays, and sports. These should be encouraged, and children who are not physically fit to take part in all of them should be given the less strenuous ones. Unfortunately in our modern life children get too much amusement of the exciting kind—the melodrama of the moving-picture shows, the theatres, and the music halls. Parents should be discouraged allowing their children too much of these. Occasionally suitable films are given for children presenting in an interesting way, history, geography, travel, and industries, but too often fights, quarrels, and love heroics are the themes presented.

These ten laws may be called the ten commandments of health. Man loves to transgress them because human flesh loves indulgence, and so man continues to suffer, for the penalty of disregard or ignorance of these laws is disease and death. The laws of health cannot be broken with impunity, although nature is wonderfully kind to the erring children of men.

Everyone's services are needed in spreading a

knowledge of these health laws. Get scientific knowledge, a sane, reasonable knowledge of how to live, and tell it to others. Get your intimate friends interested in it. Do not depend on either your own or someone else's experience. Experience with disease is often misleading and the teaching of experience frequently leaves scars or regrets that are life-long. You may learn by experience that fire burns, but isn't that a fool way of finding out, and you carry the scar for the rest of your life. Pain, suffering, disease, blindness, deafness, or other deformity are often but the scourgings of nature for the persistent breaking of these laws, if not by us, then by others, for we often suffer for broken health laws by our friends and neighbors. A polluted stream of water means typhoid fever to the people living a little lower down the stream. A friend or neighbor visits you with a child who has "just gotten over a cold," and you know it was measles when you bury your own child because of that exposure. Or we expose ourselves to disease, nature's punishment for broken laws, by indulgences such as overeating, overclothing, overheating, dissipation, irregular or insufficient sleep, insufficient physical exercise, lack of attention to personal, home, or public hygiene. Indulgences, laziness,

uncleanliness, carelessness, spell broken laws of health and disease! It is a most remarkable trait of human nature that so many good people would rather depend on prayer and magic to cure disease than real work and sanitation to prevent disease. Poor Peter Simple! You can illustrate this in a similar way to the laws of health, for

Sloth, *Indulgence*, *Magic*, *Prayer*, are the forerunners of disease; he surely is a simpleton, who in the light of modern knowledge is content to take these as his laws of health, and to think that the wave of a magic wand, or the utterance of a penitent prayer will save him from the penalty of persistently violated laws of the body. We must learn that work, eternal vigilance, moderation, scientific knowledge, and prayer is the price of health, manhood, and content.

One of the great problems of populous towns and cities is child protection and preservation, for aggregation in large numbers is always a menace to health. The assembly of children in foundling hospitals, crèches, orphanages, and schools, always increases the danger to health, because of the difficulties of ventilation, heating, and sanitation, and the easy transmission of disease by contact. Environment has always an intimate relation to the child's health. The quality of the

home gives a good index of the quality of the child's food and care. Primarily, the child has no power of resistance against the influences that mold his life. He develops conscious purpose, self-control, and the power of resistance to evil influences! Education cannot wholly efface developed evil tendencies. The attractions of the street are ever increasing, and their influences are always evil. The hours of the child spent outside the home and the school are even more important than those spent in the home and in the school. External conditions destroy with equal indifference the healthy and the weak and evil influences corrupt the most careful training.

The health of the child is the most vital question before any State, for on this depends national existence and success; but governments have been slow to recognize this fact. To-day, in many households, every able-bodied person must be revenue producing, so that the child goes without parental care and training. He is allowed to shift pretty much for himself, except for the oversight and discipline he receives in the school, and this still leaves much to be desired. Under the changing social conditions of present-day life, the public school will have to assume a larger and larger share of the duties and responsibilities that

should properly fall upon the shoulders of the parents. Life-work is becoming so sharply specialized that this seems inevitable. Many mothers are capable in lines that are revenue producing but have no knowledge, or but an indifferent knowledge, of the household duties that are vital to the health and development of their children.

We all agree that much of a child's health, his mental and physical powers, depends upon his care in infancy and his ancestry, the health and physique of his forbears. Nevertheless, Eugenics and Euthenics will find their most important and practical application in the field of intelligent supervision of the health of the child. Personal and general hygiene should have a far more prominent place on the school curriculum. Clean and right life habits will mean more for the child in life than a smattering of art and music. The relation of health to education must be emphasized, and this must include consideration of home and home conditions of the children. This health work must include, not only the teaching of personal home, and civic hygiene, but also such practical things in household economy as consideration of food and food values, buying, preparation, cooking, cooking utensils, and other housecraft. Malnutrition is rife among children,

due to bad cooking, unwholesome food, and unhygienic conditions.

In modern life mother instinct is an inadequate guide for the rearing of children into capable men and women. The mother needs the assistance of those with special knowledge and teaching aptitudes. There should be more intimate relations between the parent, the school-teacher, school nurse, the school dentist, and the school physician, in the social life of the community, as well as a more active coöperation in the school work. If the great aim of education is the fitting of children for their duties to the community and to the State, the school life of the child should touch the social life of the community more than it does, so that the habits, traditions, and superstitions of parents, ignorant of the laws of health, will not continue to mold the life habits of the child. So the closer the bond between the parents, teacher, nurse, dentist, and physician the better for the child and the greater likelihood of securing a desirable continuity of effort, and the best results. This supervision and training should be entirely in the hands of the school-teacher, nurse, dentist, and physician in conjunction with the parents, and on their shoulders should rest the whole responsibility of rearing the children of

the community into capable and law-abiding citizens. No outside body, philanthropic or otherwise—Anti-tuberculosis League, Care Committee, Dorcas Society, or Visiting Association, should be allowed to interfere with this control and direction. Such associations can be of invaluable assistance in providing supplies and in other ways. The function of the school nurse, dentist, and physician is to guard the physical well-being of the child, and thus increase the efficiency of the teacher, and render the parents that scientific knowledge that secures the fullest development of the child.

If the school is to discharge its full duty to the community, it must be the social center of the neighborhood. Therefore, the school should be designed to meet the demands for this purpose. There should be an assembly room large enough for general meetings of the community, such as debating clubs, literary societies, mothers' meetings, patriotic meetings, entertainments on public holidays, school entertainments, polling for municipal or State elections, or for any other purpose in the interests of the neighborhood. This assembly room should also be used for the formal opening of the whole school each morning, the singing of the national anthem, saluting the national flag, and Divine Invocation. For many

meetings and entertainments it is necessary to have light refreshments, so that there should be facilities for its preparation at the school. A small room could be fitted up at a small cost to provide refreshments at a minimum amount of trouble. Besides the assembly room, there should be at least a reading or study room, a small refreshment room, and a sitting or game room. The school should be open every night in the week, except Sunday, always efficiently supervised, and every foot of the school or the playground, open to the public, brilliantly lighted. It should be closed by 10 P.M., except on special occasions. If the school could be thus used as a place where young folks foregather, boys and girls would get the intercourse and pleasure which they seek, under sympathetic supervision, and be kept from the dangers and temptations of the street.

These three great factors—home, school, and environment, which mold a child's life, would thus be brought into active, sympathetic, and complete coöperation, so that the child during his growth and development is constantly under clean, honest, moral, and manly influences, that produce courage, fortitude, initiative, diligence, and independence. In the development of character children must learn the importance of discipline and

more especially of self-discipline. If we can teach children habits of healthful living, moral rectitude, and self-control, we will produce a new manhood, a new womanhood and a new world!



A MODEL SCHOOL DENTAL EQUIPMENT

PRESENTED BY THE SCHOOL NURSES OF TORONTO TO THE BOARD OF EDUCATION

CHAPTER XV

CARD SYSTEM OF REPORTS

A SATISFACTORY card system of reports must be worked out for practically every locality, for consideration must be given to local conditions. The aim should be to reduce clinical work to a minimum consistent with a well-developed plan of supervision and efficient administration, so that the energies of all can be concentrated upon accomplishing some real benefit for the child.

The forms* given are for a large city and the routine works out in the following manner. Form 1 is merely a notification of contagious disease in the school district from the head office for the nurse or medical inspector to act upon, if necessary. Form 2 is for the use of the teacher to assist her to keep track of the children, so necessary in a large school. If she has a pupil who has been away more than three days she marks an x

* All forms are 3 x 5 inches or 5 x 8 except the monthly reports.

opposite "absence," length of time away and the excuse sent from the home for such absence. This information is essential to the nurse or medical inspector when subsequently questioning and examining the child. If the teacher finds a pupil who is ill, or has a physical defect, she puts an x opposite sickness or physical defect and the medical inspector marks the diagnosis for the teacher's information. Form 3 is for the medical inspector, except the teachers annual report of school progress, and is for the purpose of keeping a complete record of all the data concerning the child's physical condition and his school progress, from the time he enters school until he graduates. It includes parent's name, nationality or birth-place of father, mother, and child, date of birth, vaccination, school entrance, and leaving or graduation. Four spaces are left for the address, school, room, class, nurse, and medical inspector, to allow for changes, and space for a complete record for the number of home visits and consultations with parents at the school. The teacher fills in the school record while the pupil is in the kindergarten, 1st book (grades 1 and 2), 2d book (grades 3 and 4), 3d book (grades 5 and 6), and 4th book (grades 7 and 8). On the back of this form is recorded every physical examina-

tion and every serious illness the child has had since entering school. Lastly there is space for recording three complete physical examinations during the child's school life. Form 4 is in duplicate, so the nurse may have a carbon copy, and gives particular details of the physical defects. The nurse's copy is signed by both nurse and medical inspector when the physical defects have been remedied. Here, too, is a record of the consultations with parents at the school, the nurse's and medical inspector's home visits, and the number of times the nurse has taken the child to the dispensary. This form shows the amount of work done in the particular case to get physical defects remedied. Form 5 for use by the principal and medical inspector, is the parent's notification of physical defect in their child, and the certificate of the family physician, surgeon, or dentist that the physical defect has been remedied. Form 5A is the parent's notification of dental defect and is used only where there is a school dental clinic. Form 5B is the parent's notification that a special examination of their child's lungs is required. Form 6 is the parent's authorization for vaccination. Form 7 is used by teacher, nurse, or medical inspector to exclude a child with suspected contagious disease. The school medical inspector

must visit the home within twenty-four hours, unless the family physician has been called in, and the visit of the school medical inspector is not necessary. Form 8 is for the exclusion of children with contagious disease, and is used only by the medical inspector. The form is given to the child to take home. Form 9 is the medical inspector's daily report sent to the head office containing a record of his morning's work. Form 10 is used by the nurse to help her to keep track of the pupils in each class and to give her the information she requires when making her home visits. Forms 11 and 12 are instructions to parents in the care of children's teeth and hair. Form 13 must be signed by the parent before the school nurse is permitted to take a child to dispensary or hospital. This is for legal protection. Form 14 is used where parents have failed to do anything for a child after being notified of physical defect. Form 15 is the nurse's daily report sent to the head office, and containing a record of her day's work. Form 16 is used where there is a free dental clinic outside the school. Form 17 is used where there is a free school dental clinic. Form 18 is the dental surgeon's daily report containing a record of his daily work and sent weekly to the head office. Form 19 is used by the dental surgeon in making

an examination of a whole class and is kept in the school for later reference. Form 20 is for a record of home conditions, family history, and the examination of a child with tuberculosis or suspected tuberculosis. Form 21 is the monthly report of a nurse, entered from her daily report at the head office each day. At the end of a year a nurse's work can be reviewed quickly and a yearly report made therefrom. Form 22 is a somewhat similar form to keep a record of the medical inspector's monthly work.

No provision has been made for a record of previous diseases for it was considered such a history was practically always of very doubtful accuracy, and of equally doubtful value.

No. 1.

Department of Medical Inspection

NOTIFICATION OF CONTAGIOUS DISEASE

.....191.....

Principal.....School.

We have been notified by the Board of Health that there is
a case of.....

.....in your School District

Patient's Name.....Age.....

Address.....

.....

Chief Medical Inspector.

No. 2.

Department of Medical Inspection

PUPIL'S REFERENCE TO MEDICAL INSPECTOR

Class..... Room..... Date.....

Teacher.....

Name..... Age.....

Address..... Referred for.....

1. Absence..... Time..... Excuse.....

.....

2. Sickness..... Diagnosis.....

.....

3. Physical Defect..... Diagnosis.....

.....

Medical Inspector.

CARD SYSTEM OF REPORTS

271

(BACK OF NO. 3)

[illegible]

COMPLETE PHYSICAL RECORD

O placed in space below means absence of defect. X means defect.

[illegible]

N. B.—Headings on card can be placed horizontally instead of vertically.

Department of Medical Inspection

MEDICAL INSPECTOR'S RECORD

Name _____

Address _____ Age _____

School _____ Class _____ Date _____
Room _____

1	DEFECTIVE VISION	GLASSES	
		MEDICAL	
2	EYE DISEASE		
3	DEFECTIVE HEARING		
4	EAR DISEASE		
5	DEFECTIVE NASAL BREATHING	OPERATIVE	
		MEDICAL	
6	HYPER-TROPHIED TONSILS	OPERATIVE	
		MEDICAL	
7	ENLARGED GLANDS		
8	PULMONARY DISEASE		
9	CARDIAC DISEASE		
10	CHOREA		
11	EPILEPSY		
12	ORTHOPEDIC DEFECT	MEDICAL	
		PHYSICAL CULTURE	
13	MALNUTRITION		
14	VACCINATION	{ PRIMARY REVACCINATION	
15	DEFECTIVE TEETH	EXTRACTION	
		FILLING	{ PRIMARY
			{ SECONDARY
16	DEFECTIVE PALATE		
17	SKIN DISEASE		
18	MISCELLANEOUS		

Medical Inspector

Inspector must forward this form to Department of Medical Inspection with Daily Report.

No. 4		Department of Medical Inspection NURSE'S RECORD COPY				Information for Medical Inspector Filled in by Nurse
Directions for Nurse		Name _____ Address _____ Age _____ School _____ Class _____ Date _____ Room _____ Termination _____				
1	DEFECTIVE VISION	GLASSES				1
		MEDICAL				
2	EYE DISEASE					2
3	DEFECTIVE HEARING					3
4	EAR DISEASE					4
5	DEFECTIVE NASAL BREATHING	OPERATIVE				5
		MEDICAL				
6	HYPER-TROPHIED TONSILS	OPERATIVE				6
		MEDICAL				
7	ENLARGED GLANDS					7
8	PULMONARY DISEASE					8
9	CARDIAC DISEASE					9
10	CHOREA					10
11	EPILEPSY					11
12	ORTHOPEDIC DEFECT	MEDICAL				12
		PHYSICAL CULTURE				
13	MALNUTRITION					13
14	VACCINATION	PRIMARY				14
		REVACCINATION				
15	DEFECTIVE TEETH	EXTRACTION				15
		FILLING	PRIMARY			
			SECONDARY			
16	DEFECTIVE PALATE					16
17	SKIN DISEASE					17
18	MISCELLANEOUS					18
CONSULTATIONS AT SCHOOL					Terminated	191
NURSE'S HOME VISITS						
DISPENSARY CALLS						
Medical Inspector's Home Visits						

Nurse

Medical Inspector

Nurse must forward this form to Department of Medical Inspection when case is terminated.

No. 5

(SIZE OF CARD 3" x 5")

(FRONT)

Department of Medical Inspection

PARENT'S NOTIFICATION

School..... Room..... Date.....

Mr.....

.....

DEAR SIR:

Your child's greatest happiness and possession is health. Early attention to his body will preserve his health, help his school progress and growth, and may save him from debility, deformity, disease, or death. This notification is sent to you in the interest of your child's health. On the back of this card the School Medical Inspector reports a condition needing your attention. Please have this card signed by your doctor or dentist on the back hereof, and return it to me.

.....

Principal.
(Over)

(BACK OF NO. 5)

I have this day examined.....
and find that he has the defect or disease marked x below. I strongly advise that the child be taken to the family physician or dentist for examination and advice.

- | | |
|-------------------------------|--------------------------|
| 1 Defective eyesight..... | 10 St. Vitus Dance..... |
| 2 Eye disease..... | 11 Epilepsy..... |
| 3 Defective hearing..... | 12 Defective joint..... |
| 4 Ear disease..... | 13 Wasting..... |
| 5 Defective nose breathing... | 14 Tonsillitis..... |
| 6 Enlarged tonsils..... | 15 Decayed teeth..... |
| 7 Enlarged glands..... | 16 Defective palate..... |
| 8 Lung disease..... | 17 Skin disease..... |
| 9 Heart disease..... | 18 Influenza..... |
| 19 Other diseases..... | |

.....

Medical Inspector.

I have advised (medical), (surgical), (dental), treatment, which is completed.

Date.....

Family Physician.

.....

*Clinic Physician.**Family Dentist.*

No. 5A

(FRONT)

Department of Medical Inspection

DENTAL INSPECTION

PARENT'S NOTIFICATION

To the Parent or Guardian:191...

.....has been examined and the
teeth and mouth found to be in the condition marked.Defective Permanent Teeth ☐ Defective Temporary Teeth ☐Abscess..... ☐ Mouth Unclean..... ☐

You are urgently advised to take your child to your family dentist.
Present this card, and when the treatment is complete, have the form
below signed, and this card returned by the child to the School Nurse.

I have completed the treatment required.

Date..... Signed.....

(OVER)

Family Dentist.

(BACK OF 5A)

TO PARENTS

Parents frequently do not realize the serious condition of the child's mouth. An unclean mouth with decaying teeth and abscesses, is one of the gravest possible dangers to the health. Every parent should frequently examine the mouth of the child. The mouth is the vestibule of the body. It is more important that it be clean, than that the face be clean. Your child will benefit both physically and mentally by the correction of the defects marked. If a *small* tooth brush has not already been provided for the child, or is not used regularly night and morning both teeth and health will suffer.

If you do not find it possible to provide for the treatment, fill in the blank application below and return this card to the School Nurse.

I hereby make application for dental treatment for my child, in the free dental clinic.

Number in Family..... Residence.....

..... Occupation.....

.....
Parent's Signature

No. 5B

Department of Medical Inspection**PARENT'S NOTIFICATION**

To Parents or Guardian of.....
 The Medical Inspector in.....School
 considers it necessary for this child to have a special examination
 of the chest.

The Special Examiner will be at the school on.....

.....
 Your child will be examined on this date. You are invited to
 be present. If you are unable to attend sign this card giving
 your consent for the examination.

.....
Parent or Guardian.

No. 6

Department of Medical Inspection**PARENT'S REQUEST TO MEDICAL INSPECTOR**

.....191...
 I hereby authorize Dr.....Medical
 Inspector to vaccinate.....

 my child or ward.

.....
Parent or Guardian.

No. 7

Department of Medical Inspection**REPORT OF SUSPECTED CONTAGIOUS DISEASE**

.....191...
 School..... Room..... Class.....
 Name..... Age.....
 Address.....
 Excluded for suspected.....

The School Medical Inspector will visit your home within 24 hours.

Result
 Med. Insp. notified.....

.....
School Nurse

.....
Medical Inspector

No. 8

(FRONT)

Department of Medical Inspection

PUPIL'S EXCLUSION

.....191...

School..... Room.....

Name..... Age.....

Address.....

IS EXCLUDED FROM SCHOOL

Until.....191.....

Reason:

.....*Principal*.....*Medical Inspector*.....

(OVER)

(BACK OF NO. 8)

NOTICE TO PARENTS

The disease mentioned on the other side of this card is a contagious affection, and liable to be transmitted to other children.

The child must not be allowed to play with other children.

All children *in the same house* are excluded from school for the same time as this child, unless one of them develops the disease;

in such case all are excluded for.....weeks from the beginning of the last one's illness.

The child should return to school after the quarantine card has been removed from the house, or on.....191... if the house has not been quarantined, for re-examination by the Medical Inspector.

If found free from disease.....he may return to the classroom.

DAILY REPORT

Medic & Inspector

278

EXCLUSIONS FROM SCHOOL FOR CONTAGIOUS DISEASE

[illegible]

191—

School Nurse

School-

Room-

Class-

CLASS RECORD

[illegible]

[illegible]

No. II

Department of Medical Inspection

INSTRUCTIONS TO PARENTS

CARE OF THE MOUTH AND TEETH

The physical examination of school children shows that in very many instances the teeth are in a decayed and unhealthy condition. The first teeth in most cases are entirely neglected.

A child's first teeth are as important as its second teeth. They should be preserved until replaced by those of the second set.

If the first teeth are allowed to decay the jaw does not develop to its proper size and the large second teeth are crowded, and often irregular, destroying the shape of the face.

Decayed teeth produce uncleanness, pus from abscesses, diseased gums, and toothache. The child cannot properly chew its food.

Improperly chewed food, mixed with pus, causes indigestion and general poor health, and handicaps the child's progress in school.

Most disease germs enter the body through the mouth. A child with a diseased and unclean mouth is much more likely to contract any contagious disease, which may rob it of its proper chance of physical and mental development.

Teeth should be brushed every NIGHT and MORNING, and after EACH MEAL, if possible, using a SMALL brush and a dentifrice.

The first teeth of the second set are the "six years molars" which come at six years, just back of the last teeth of the first set. Watch for them, and make a special effort to preserve them.

No. 12

Department of Medical Inspection

Instructions to Parents

TO REMOVE AND PREVENT VERMIN IN THE HAIR

Mix thoroughly equal parts of kerosene oil and sweet oil. Saturate hair and cover the head with a towel, for at least six hours.

Remove towel and comb hair thoroughly with fine-tooth comb. Finally wash with plenty of hot water and castile soap. A teaspoonful of washing soda (sodium carbonate) added to each quart of water will aid in removing the oil. Rinse well and dry the head carefully.

The above treatment will prevent nits.

All school children should have their hair combed daily with a fine-tooth comb.

No. 13

Department of Medical Inspection

PARENT'S REQUEST TO NURSE

The parent or guardian of.....
 living at.....

requests that the School Nurse take said child to a hospital or
 dispensary for treatment.

Name of parent or guardian.....

Address.....

.....191.....
School Nurse

No. 14

Department of Medical Inspection

REQUEST FOR CONSULTATION

.....Public School

To parent or guardian of

.....

Examination of your child by the School Medical Inspector
 shows thathe needs medical attention.

Please call at the school at.....o'clock
 on.....and see the
 School Nurse.

.....
Medical Inspector.

.....
Principal.
191.....

Department of Medical Inspection

191.....

School Nurse

DAILY REPORT

[illegible]

N = New Cases, I = Instructions, T = Treatment

[illegible]

SUSPECT EXCLUSIONS

[illegible]

RESULTS OBTAINED

[illegible]

No 16

DEPARTMENT OF MEDICAL INSPECTION

Nurse's Report to Dental Clinic

.....191...

This Certifies that.....
is recommended to the Dental Clinic for free
treatment.

.....
SCHOOL NURSE

DAILY REPORT

[illegible]

(FRONT)

NO. 20

Med. Inspector.....

Nurse.....

Special Examiner.....

Department of Medical Inspection

School.....

Date.....

Name..... Address..... Age..... Room..... Birth place..... f..... m..... c.....

House brick frame Condition g. Light g. No. of families
stone f. b. f. b.Cleaniness g. Water i. San. Con. i. Bath Vent. g.
f. b. o. f. b.Family. Adults m. S. Children m. Y. Children m. Boarders m. No. of Bedrooms
f. f. f. f. f. No. of WindowsEconomic. Rent Patient's bedroom. Size No. of inmates Church
No. of windows

	INCOME				AID				Total
	Husband	Wife	Parents	Children	Society	Church	Employer	City	
Wages.....									
Occupation.....									
Hours.....									

Visited by
Report

Recommend

Action taken

g. good. f. fair. b. bad. m. male. f. female. o. outside. i. inside. s. school. y. younger

Med. Inspector _____
 Special Examiner _____

Physical Examination for Tuberculosis

Date _____

FAMILY: Father
 re Mother
 hereditary, Brothers
 physical, Sisters
 and Relatives
 exposure Others
 conditions.

Misc.

Alcohol Drugs Crime

Personal Diseases: M.T. P. D. C-P. M. S-F. T. I. P. B. P. R. C. S.T.B. Labor Breast Weaned

Complaint

Duration

Previous treatment

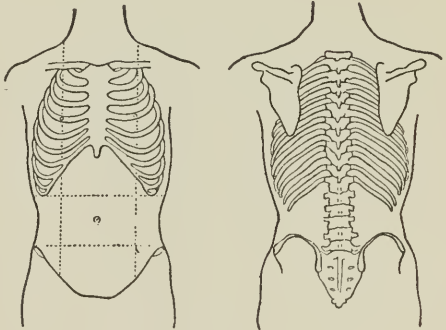
Ear
 Nose

Teeth
 Tonsils
 Bowels

Glands
 Scars
 Urine
 Sputum
 Xray

Temp. Pulse Resp. Wt.

Appetite
 Nutrition
 Heart
 Abdomen
 V.P. test



Anatomical lesions

Provisional diagnosis

M. Mumps. T. Tonsillitis. P. Pertussis. D. Diph. C-P. Chicken-pox. M. Measles. S-F. Scarlet Fever. T. Typhoid. I. Influenza
 P. Pleurisy. B. Bronchitis. P. Pneumonia. R. Rheumatic Fever. C. Chorea. S. Syphilis. T-B. Tuberculosis.

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HOLT—*Diseases of Infancy and Childhood.*
HUTCHINSON—*Preventable Diseases.*

Medical Inspector

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